The Effects of Cognitive Behavioral Techniques in Swimmers

Amir Askari (PhD Research Scholar)
Jyothi S. Madgaonkar (PhD, Associate Professor)
Department of Psychology
University of Mysore
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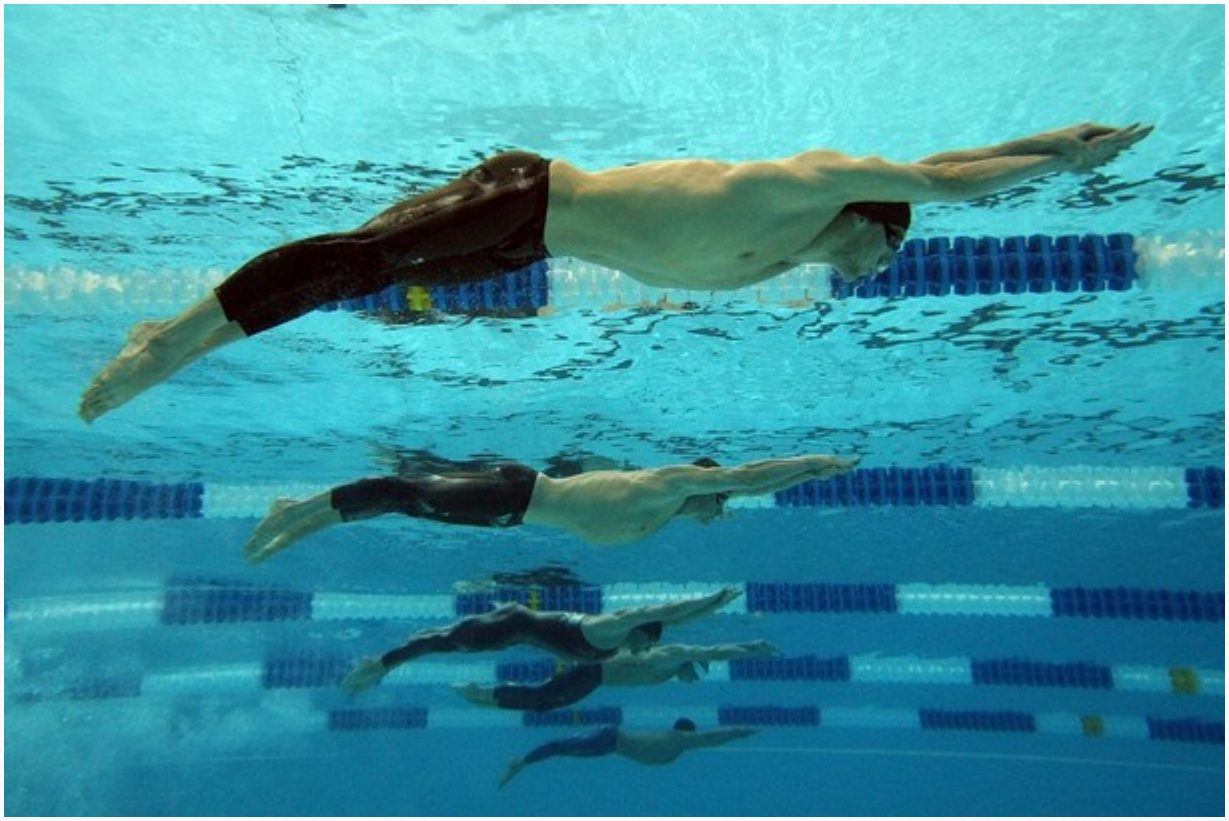
Aim and Objectives

The purpose of the investigation was to examine the effects of Cognitive Behavior Techniques in swimming performance.

The program included several Psychological skills such as, relaxation, imagery, goal setting, cognitive interview, concentration and self-talks.

Swimming is both a therapeutic and a competitive *sport*. It brings a completely new physical sensation and strengthens all your limbs.



What is Choking?

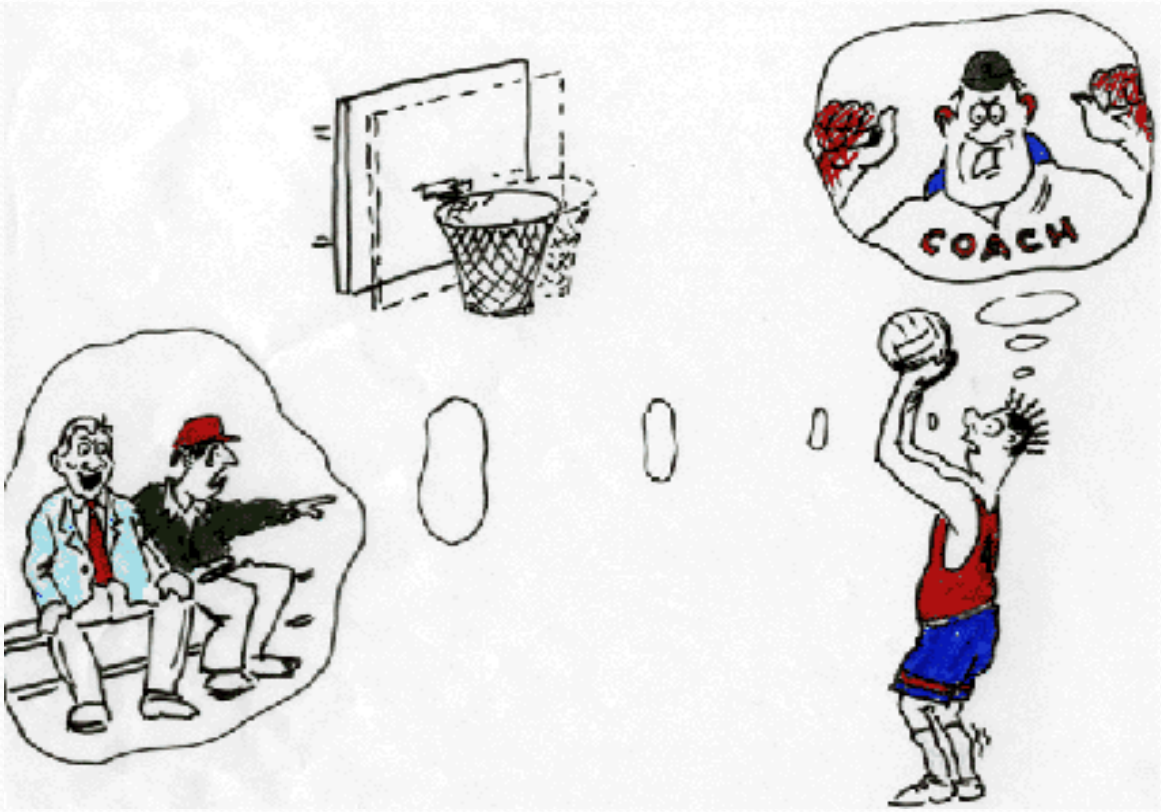
In general, Choking has been defined as the occurrence of sub-optimal performance under pressure (Baumeister and Showers, 1984)

There is still confusion among athletes, coaches, and media as to what exactly choking is?

Most researchers have trouble defining choking but they all agree it hurts performance (Weinberg & Gould, 2000).

Choking produces an impaired performance due to extensive pressure and stress (Wang, 2002).

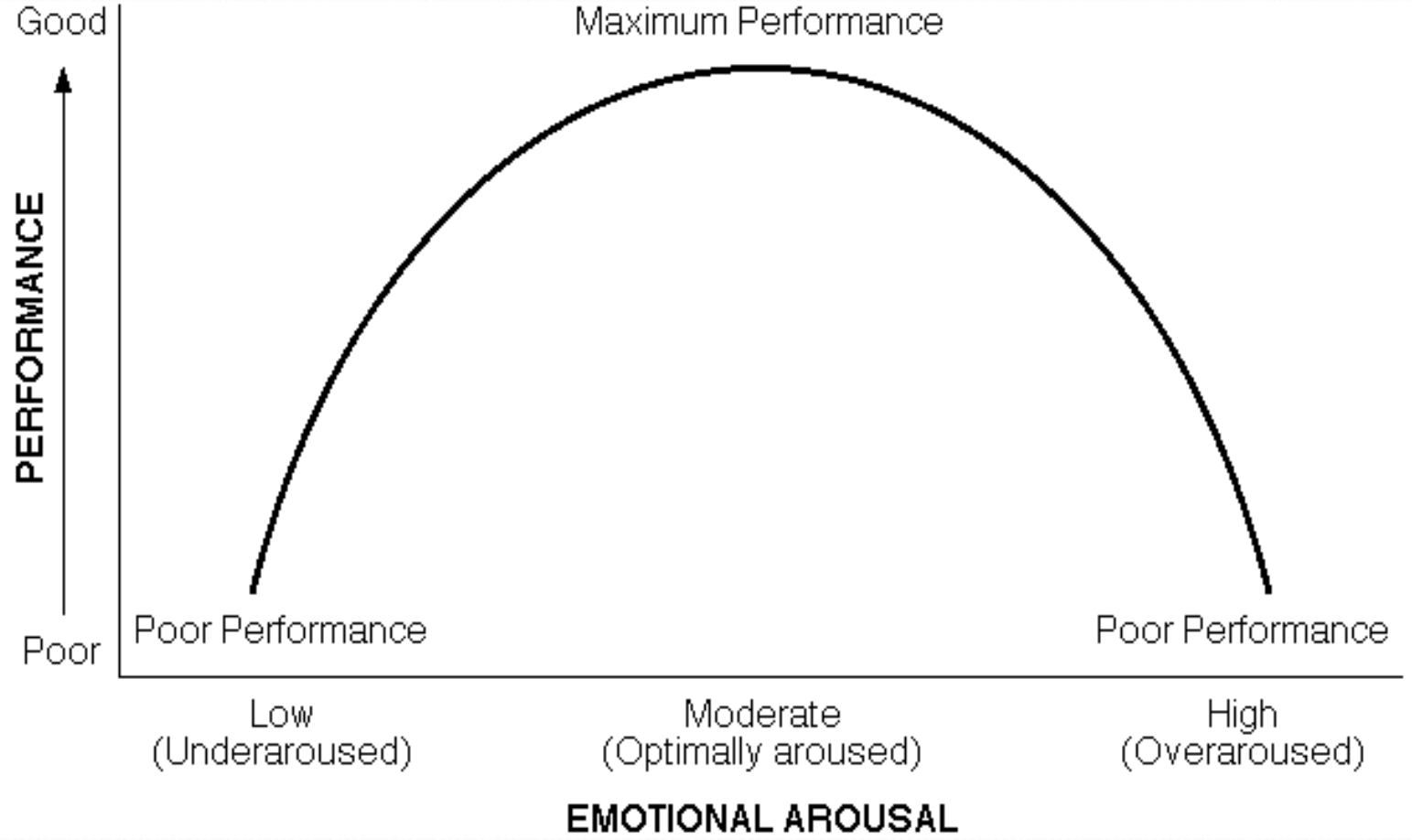
Some athletes tend to overanalyze during a match so they become anxious, which takes their focus off their main goal.



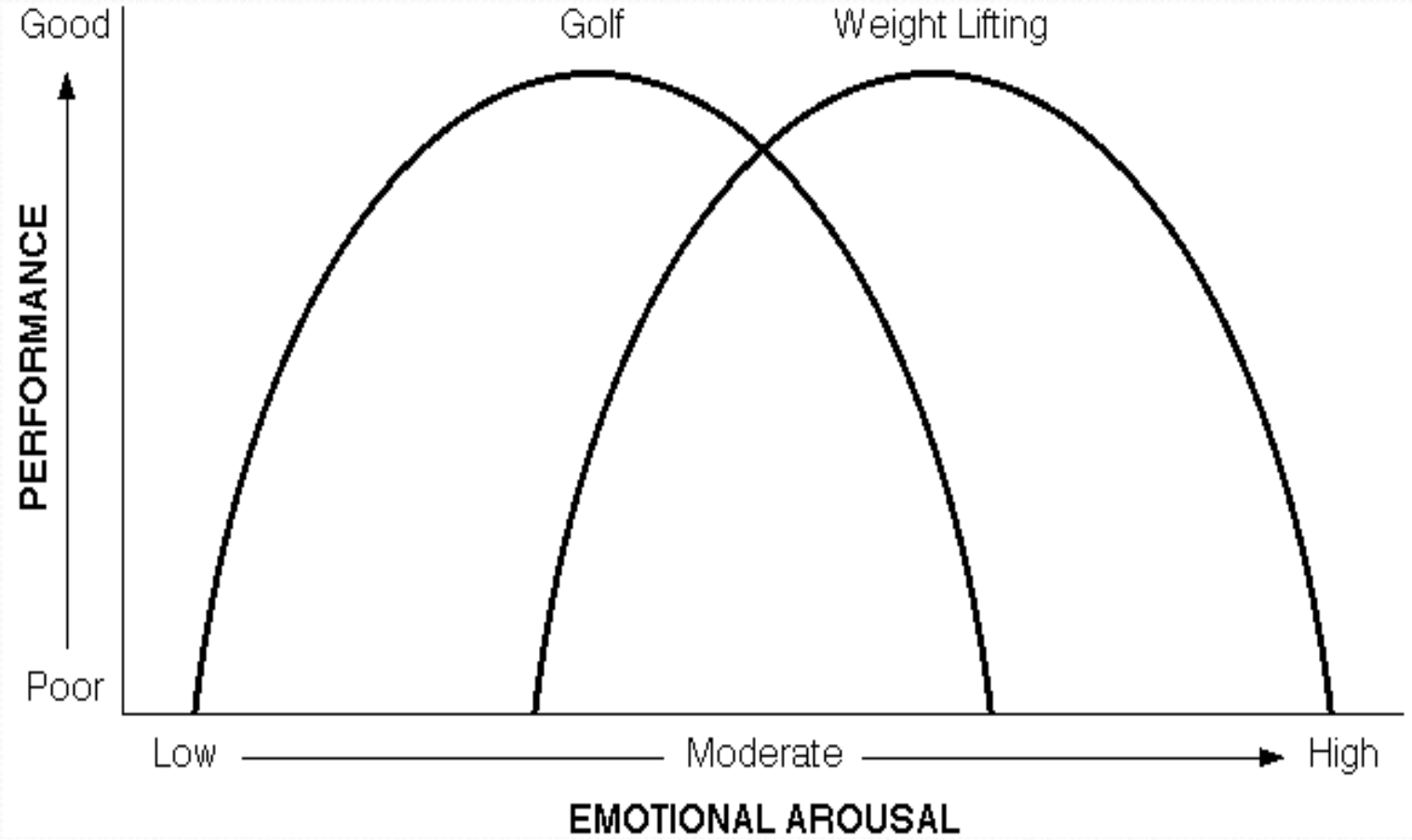
Anxiety and Performance

- The relationship between physiological arousal / anxiety and performance was found to be an inverted-U shape (Yerkes and Dodson, 1908).
  - Low arousal = poor performance
  - Increased arousal = improved performance
  - Very high arousal = poor performance

Relationship Between Arousal and Performance

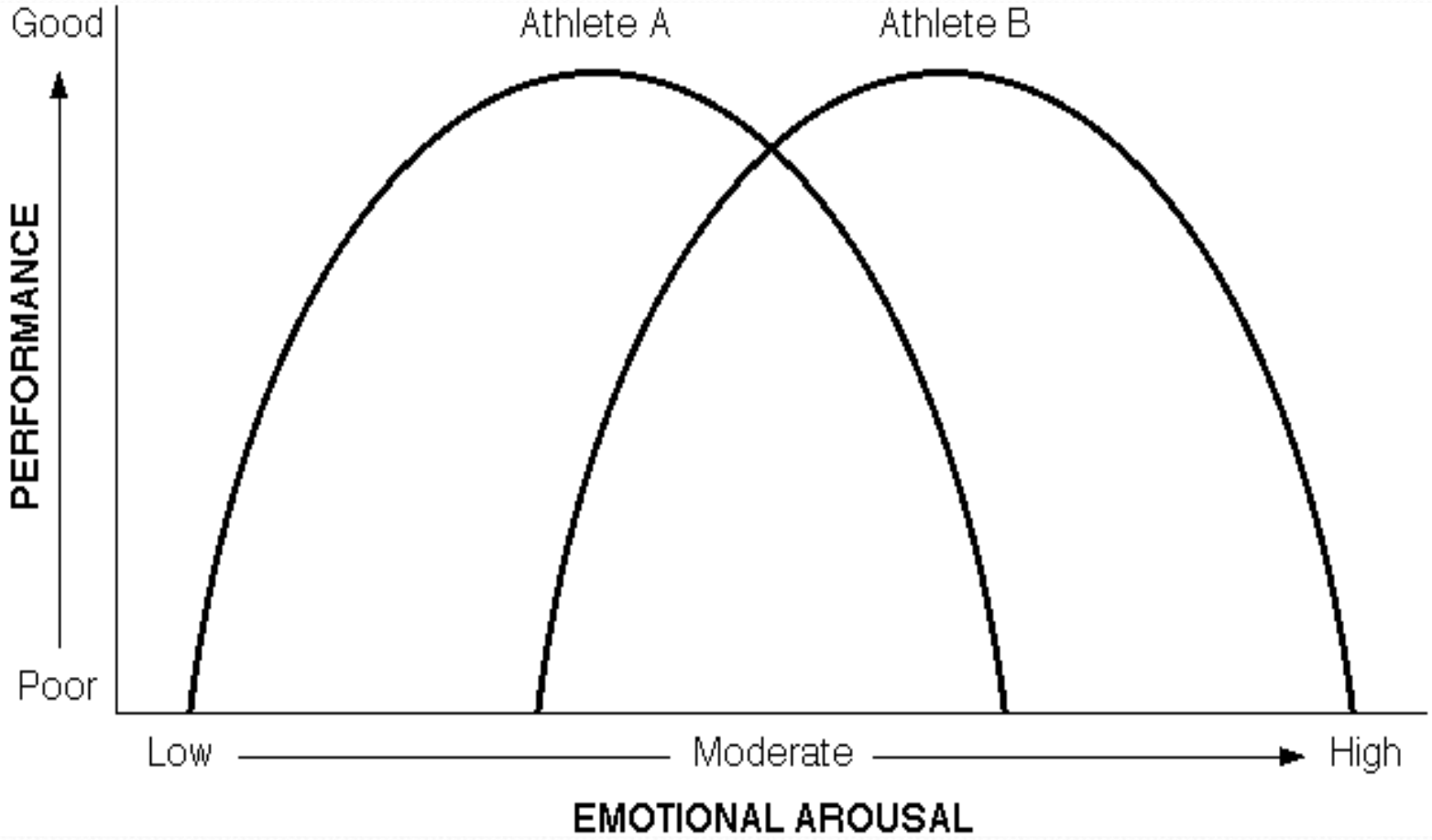


Sport Specific Optimal Levels of Arousal



Yerkes-Dodson Law: **If the task is complex, requiring fine motor skill, the optimal level of arousal is low. If the task is relatively simple, requiring gross motor skill, the optimal level of arousal is high**.

Athlete Specific Optimal Levels of Arousal



Somatic Anxiety and Athletes

- In somatic anxiety there is a curvilinear relationship with performance (Yerkes & Dodson, 1908).
- Somatic arousal is necessary in athletics because it enhances reaction speed of decision making as well as physical reactions.
- But for athletics, there is not going to be as drastic drop in performance as the inverted-U hypothesis proposes.

Cognitive Anxiety and Athletes

- In cognitive anxiety there is a negatively linear relationship with performance (Martens et al., 1990).
- Cognitive anxiety is disruptive to athletic performance because mental resources are being used inefficiently.

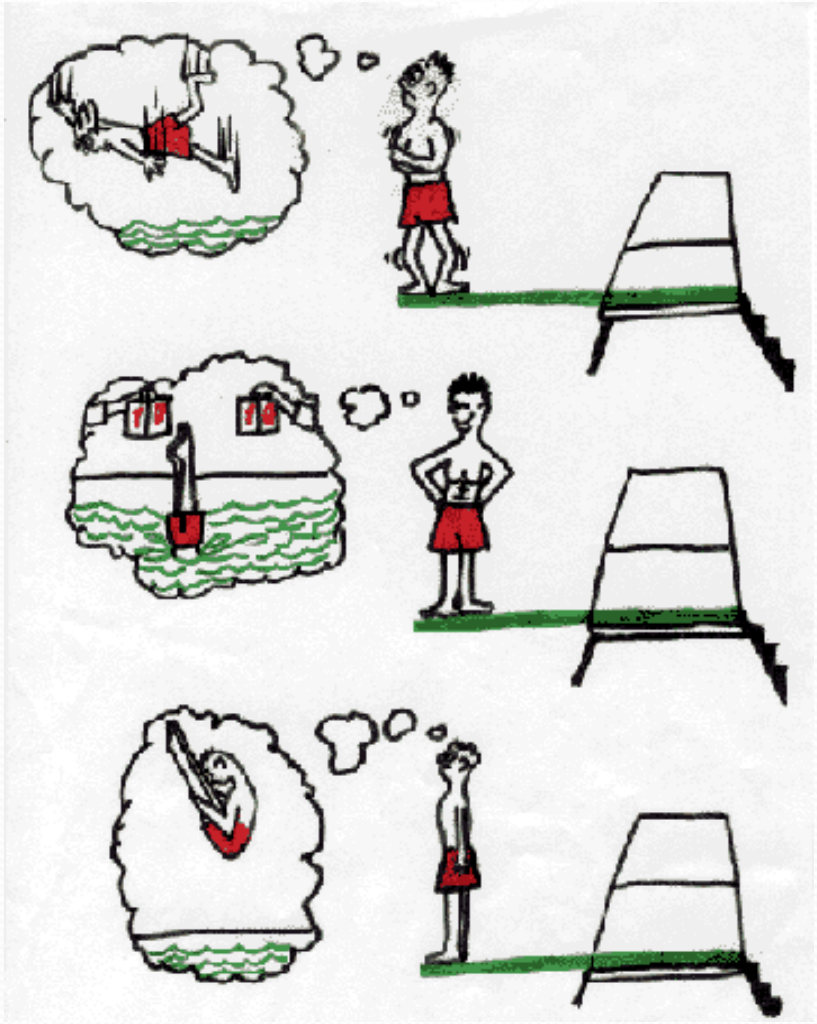
Imagery

What is imagery?

How does imagery work?

Uses of imagery?

Types of imagery?



What is Imagery?

Imagery aliases: visualization, mental research, mental practice.

Imagery involves: creating or recreating and experience in your mind.

How Imagery Works

Psycho-neuromuscular theory - in imagery the same physiological function works as if they are doing the movement (EEG feedback).

Symbolic Learning theory - Proving a image and contemplating it before competitive competition.

Psychological Skill Hypothesis - Abrupt changes, or catastrophe...the individual will not allow it to interfere.

Use of Imagery

Improve your concentration - focus on the key elements of the performance.
Build Confidence - An ability to continuously produce skill.
Control Emotional responses.
Practice Sports Skills.

Types of Imagery

Internal Imagery - the execution of a skill from your own perspective.
External Imagery - View yourself from the perspective of an external observer.

Methods

- *Participants*
  - 43 participants aged 11-16.5
    - Experimental Group, 14 swimmers (10 male, 4 female)
      - Swimming experience ranged from 2 to 7 years
    - Control Group, 29 swimmers (15 male, 14 female)
      - Swimming experience ranged from 2 to 12 years
  - **All from India – Karnataka state Club**
  - Instruments:
    - Competitive State Anxiety Inventory-2 (CSAI-2)
    - Demographics Sheet
    - Audio CD disk containing Relaxation
    - Imagery Scripts

Results

A two-way analysis of variance (group X measurement) with repeated measurements on the second factor was used to examine the effect of the intervention program on the performance, anxiety and confidence levels of the swimming athletes.

Results regarding the performance revealed a significant interaction effect between the two factors (Wilks' λ= .843, F (1, 41) = 7.65, p < .008, η2 = .16).

Results showed that performance levels of the experimental group improved (p =.003) and the control's group performance levels remained constant (p = .82).

Both groups increased their confidence levels, but the experimental group increased their confidence more than the control group.

Finally, only the measurement main effect for the somatic anxiety and cognitive anxiety reached statistical significance, Mean values shows that both groups showed an increase in both somatic and cognitive anxiety.

The experimental group showed a greater increase in somatic anxiety compared to the control group.

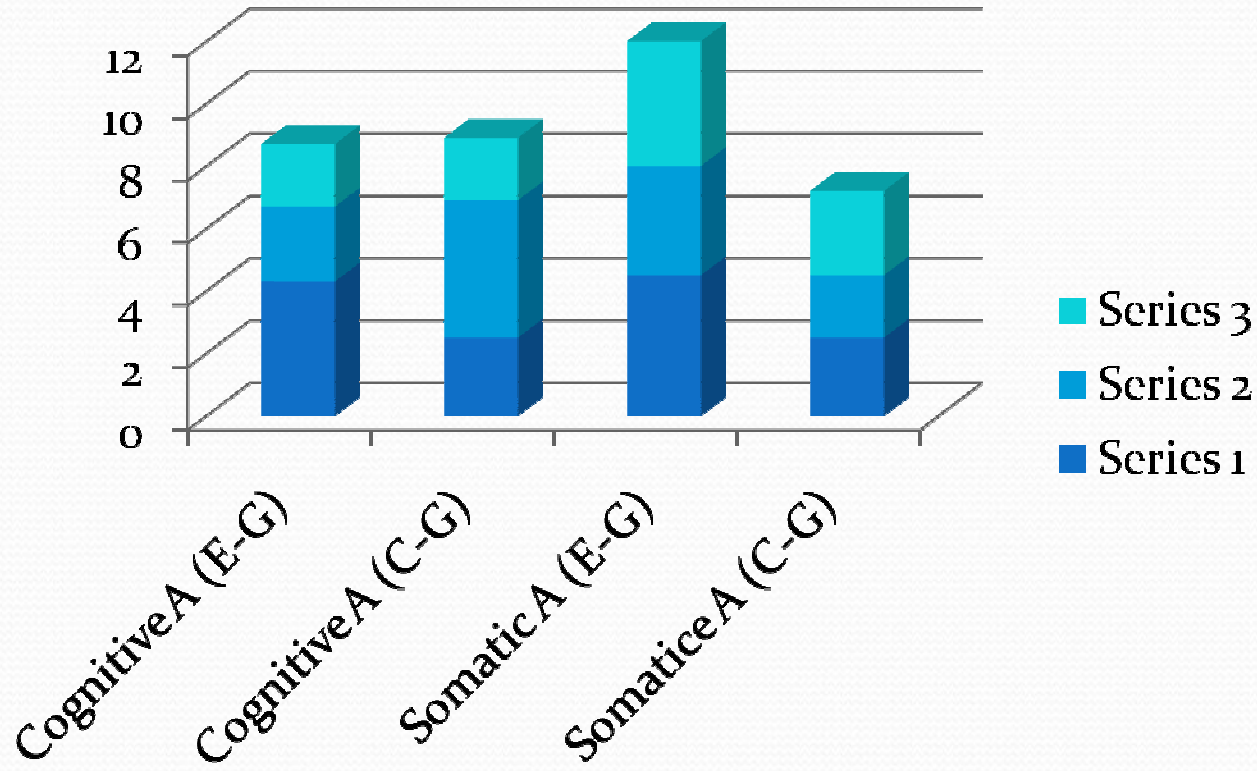
Discussion

The fact that the experimental group's performance showed an increase provides support for the success of the mental training program supports the findings of several other studies (Edwards & Hardy, 1996; Thomas, Mayland, & Hanton, 2004; Theodorakis et al., 2002).

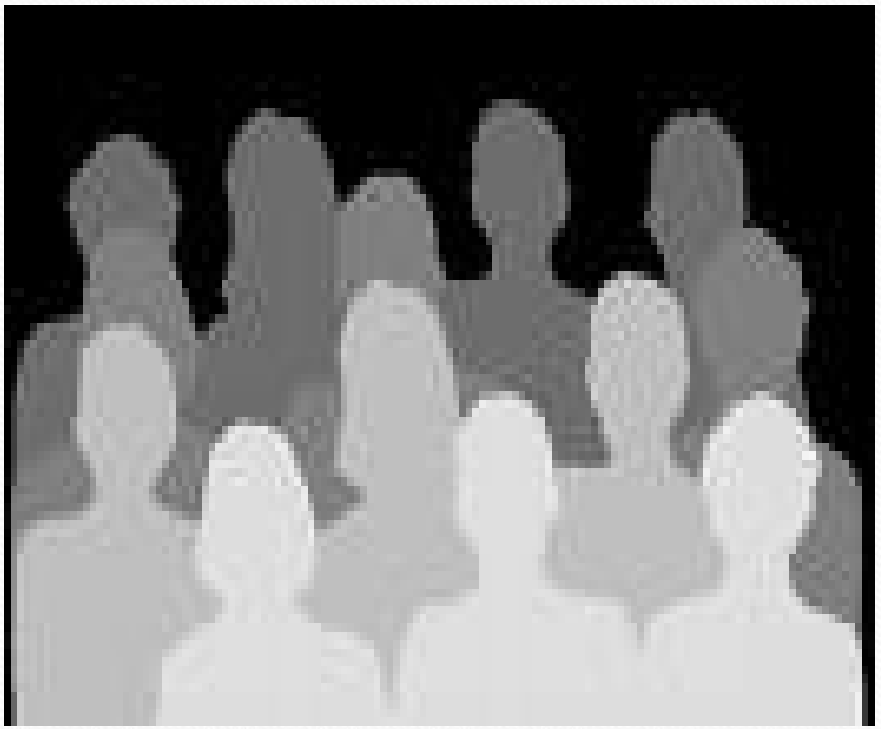
In addition, a significant improvement in confidence in the experimental group over the course of the intervention shows that athletes increased their beliefs.

Confidence helps the athletes remain focused on their task no matter what the outcome might be and it minimizes the chances of choking.

The levels of cognitive anxiety remained constant across the two measurements between the two groups. However somatic anxiety increased to higher levels for the experimental group compared to the control group.

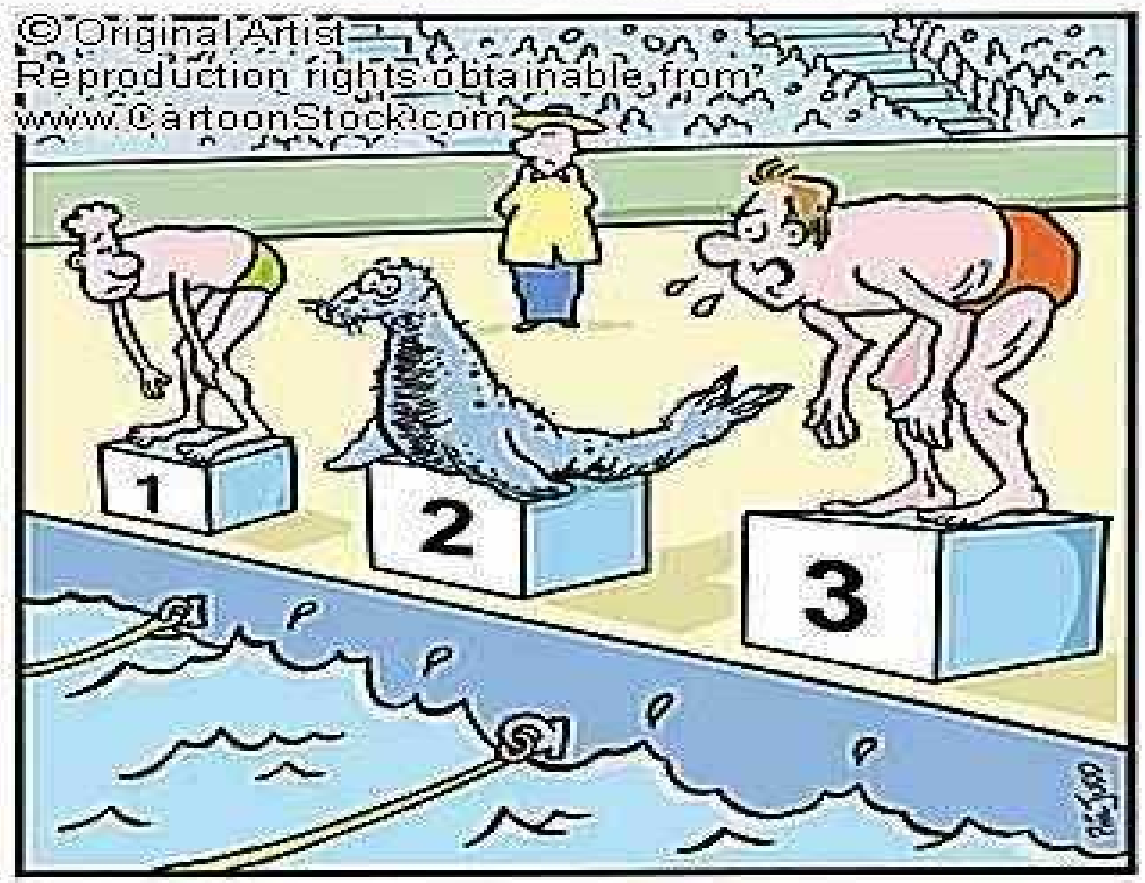


Pressure was created by recording each athlete's race by a camera and by the presence of audience. The results showed that the participants in the experimental group experienced an increase in their performance under the higher-pressure condition after the completion of Cognitive Behavior Techniques



Future studies should aim at replicating this type of applied intervention or incorporate other well established intervention programs, using a larger number of participants from different sports and include assessments of how the athletes in the experimental and control group react in real race or real performance situations.

Thank you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