

IMPACT OF BIOFEEDBACK TRAINING IN OPTIMIZING PHYSICAL AND MENTAL SKILL MEASURES AMONG UNIVERSITY WOMEN BASKETBALL PLAYERS

Ms.S.Archana Mani Malathi,*

Abstract

The purpose of the study was to find out the Impact of Biofeedback Training in Optimizing Physical and Mental Skill Measures among University Women Basketball Players. For the purpose of the study 30 women basketball players were selected as subject. And six week training program on Biofeedback was given to them. Pre and post test were conducted and the obtained f value of 2.962 was greater than the required table value of 2.06. So the study was significant at 0.05 level of confidence and the Hypothesis of the researcher was accepted. The role of sport psychology in a multidisciplinary context is increasingly recognized as an important component of the sports medicine team.

Key words: Biofeedback, Physical performance, Mental Skill Measures etc.

Introduction

Biofeedback is a monitoring process by which different kinds of equipment are used to obtain information concerning a number of different functions controlled by the *autonomic nervous system*. Biofeedback data will commonly include heart rate, blood pressure, respiration, and other quantifiable features of human performance.

Biofeedback also describes the ongoing relationship between the physical performance of the human body in conjunction with the thinking and the emotional processes of the subject. In this

* **Ph.D Research Scholar, Alagappa University College of Physical Education, Karaikudi.**

sense, biofeedback is training and coaching method, one that is designed to alter the behaviour of the subject; biofeedback is intended to permit an athlete to acquire a skill that may be used to best manage the relationship between physical and mental performance. It includes

- Deep breathing
- Progressive muscle relaxation -- alternately tightening and then relaxing different muscle groups.
- Guided imagery -- concentrating on a specific image (such as the colour and texture of an orange) to focus your mind and make you feel more relaxed.
- Mindfulness meditation -- focusing your thoughts and letting go of negative emotions.

Hypothesis

The study was hypothesised as Biofeedback training will improve the physical and Mental skill performance of Basketball players.

Selected Reviews

Beyond the Barriers Peak Performance Programmes provide you with remarkably simple yet very effective techniques that are based upon 30 years of psychophysiological, neurocardiological and biophysical research supported by, hundreds of studies across the fields of neurology, cardiology and psychology. Our cutting edge programme teaches powerful techniques to enhance performance by learning to manage the body's response to pressure and aggressive anxiety. Athletes discover how to balance their autonomic nervous system and control their emotional game for peak performance on demand.

After reviewing more than 60 studies related to biofeedback, The Institute of Psychiatry at King's College London described biofeedback therapy as a "non-invasive, effective psychophysiological intervention for psychiatric disorders," concluding that over 80 percent of studies reported some level of clinical decrease in symptoms as a result of biofeedback exposure. According to their research, biofeedback interventions have been used successfully to treat common disorders including anxiety, autism, depression, eating disorders and schizophrenia. But biofeedback therapies aren't just useful for managing mental disorders — they're also becoming

more common in the treatment of injury recovery and chronic pain. Because therapists now offer several different biofeedback modalities, experts recommend patients try multiple bio-regulating approaches during their sessions. This has been shown to be most effective in significantly reducing symptoms.

Methodology

In the data-gathering sense, biofeedback utilizes a number of different tools. The most common of these devices is a heart monitor, which collects data with respect to heart rate and physical performance. Heart monitors are portable devices that do not interfere in the performance of an athlete to any significant degree. Sophisticated biofeedback technologies include the measurement of heart rate, blood pressure, oxygen uptake (VO_2 max, an expression as to how much oxygen can be processed by the body at different stages of exertion), and the perspiration rate (an indicator of how efficiently the thermoregulatory system functions under variable stresses). In addition to these factors, an electroencephalograph (EEG) may be employed to monitor the brain wave activity, coupled with an electromyography (EMG), which measures the amount of tension and electrical activity in the muscles at different times, when subjected to varying stresses. The data obtained through these biofeedback measurements may be readily compared with the results of other physical tests of autonomic function, such as the analysis of Skills in Basketball. For the purpose of the study 30 women basketball players were selected and they were divided into two groups as control and experimental group. The pre and post test were conducted to identify the significance of the Study.

		Control Group	Skill Performance	Mental skill Measure	Sources of variance	Sum of squares	Df	Mean square	F ratio
Post	Mean	5.13	6.50	6.13	Between	8.117	2	2.706	2.962
	S.D	.99	.76	.99					
Pre	No	5	9	8	Within	23.750	27	.913	
	Total					31.867	29		

Computation Analysis of Variance (Articles) of Pre test and Post test Means of Skill Performance and Mental Skill Measurement

Table value = 2.06 , df = (0.05) (27)

Findings and Discussion

- ✓ Shooting test: A three-minute shooting test was used. The participant was asked to execute as many shots as possible from any position on a marked perimeter of 366 cm radius from the hoop for 90 seconds. The participant was responsible for shooting and retrieving the ball himself.
- ✓ Mental Skills Questionnaire: Used to measure the mental imagery, self Confidence and Concentration
- ✓ For examining the improvement in the dependent variables on day one, day ten and one month follow-up along with inter-group comparison.
- ✓ The obtained f value of 2.962 was greater than the required table value of 2.06. So the study was significant at 0.05 level of confidence and the Hypothesis of the researcher was accepted.

Recommendation

- The role of sport psychology in a multidisciplinary context is increasingly recognized as an important component of the sports medicine team. Just as clinical athlete support is critical in dealing with injuries, the sport science support team also plays an integral role in guiding the athlete toward preparation and/or re-entry to the athletic playing field.
- Multidisciplinary sports medicine centres that cater to a variety of athletes' needs will play an increasing role in guiding athletes toward injury prevention, sport-specific training and performance enhancement.
- The future appears promising with the development of multifaceted sport medicine facilities that-in addition to clinical support-will incorporate psychological skills training and strategies for performance enhancement, which may include the utilization of biofeedback, reaction-time training, vision training, sport-specific decision training, virtual reality simulators and sport performance analytics.

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