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## Effects of progressive muscle relaxation technique on mental skills of Kerala male volleyball players

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### Abstract

The present study was conducted to examine the effects of progressive muscle relaxation technique on mental skills of volleyball players. To obtain data for this study, the investigators had selected 20 male subjects were selected randomly Calicut university volleyball match practice group in which 10 subjects were in experimental group and 10 subjects acted as control group. The purposive sampling technique was used to obtain the required data. To measure the level of mental skills of the subjects, the mental skills questionnaire constructed by Hardy and Nelson was administered. Analysis of covariance was used to determine significant differences for dependent variables within the two groups. When a significant difference among the group was observed, a pair wise comparison of the groups was done by using post-hoc test to identify direction and significant differences between the groups. The level of significance was set at 0.05 in order to test the differences to be considered significant. The results revealed that progressive muscular relaxation technique was effective in improving the imagery ability, mental preparation and concentration ability and mental skill of subjects. Though the pre-test and post-test mean difference between control groups has shown marginal improvement as mean difference was found respectively.

**Keywords:** Mental Skill, Progressive Muscle Relaxation Technique.

### 1. Introduction

Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete's holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice. Across all levels of the athletic continuum, from youth through professional sports, psychological preparation is as essential to success as physical conditioning, adequate hydration and proper nutrition (Creasy *et al.*, 2009) [4]. Being physically prepared is an important key to gaining that competitive edge, but training the brain is just as important. For many athletes psychological barriers hinder their performance. Coaches have the skills, knowledge, and experience to guide their athletes through the physical and technical preparation, but it is up to the athlete to take responsibility for their own mental skills development. Practice is a vital component in an athlete's life.

Frey *et al.*, 2003 [1] state that the athlete learns the necessary skills for the sport, and must rehearse these physical skills in order to improve performance in competition. This is true no matter the sport. Not only should Mental skills be implemented during practice but during competition as well. Getting the most out of practice and training sessions requires more effort than just showing up and participating. In order for athletes to perform to the best of their ability they need to be at practice both physically and mentally. When there is anxiety during sport performance it can have an extremely negative effect on the athlete. Mental-skills training can be a difficult topic for the athletes to not only understand but also to be willing to participate in as well as take seriously. Some people will look at mental training and think it is for "weak" people, and that they do not need it. That is by no means the case.

Mental-skills training's purpose is to assist athletes in developing better practice and competition techniques and preparation. Every athlete is different; therefore, not every athlete

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will follow the same practice procedure or competition preparation. Being a national champion diver who had to endure many mental barriers throughout his career, the topic of mental-skills training was very interesting to him. It was a topic that he would have liked to have known more about while still participating in diving; now it will be useful to him as a coach. Research mental-skills training could also come into play while teaching in a classroom as well. If researchers are able to help their students mentally work through their problems, whether it is in the classroom or out of the classroom, they are helping them become better learners. Mental-skills training are designed to work with people to improve their performance through cognitive strategies. Mental-skills training can serve a number of purposes in preparing athletes for competition and improving the quality of their lives. These include improving focus (Orlick & Partington, 1988) [5], managing anxiety (Mamassis & Doganis, 2004), managing emotions (Lazarus, 2000), dealing with pressure (Beilock *et al.*, 2001), building confidence (Myers *et al.*, 2004), communicating with coaches (Sullivan, 1993), communicating with teammates (Yukelson, 1997) [7], performing as well in competition as in practice (Frey *et al.*, 2003) [1], dealing with injury and rehabilitation (Wiese & Weiss, 1987) [6], dealing with personal issues (Papacharisis *et al.*, 2005), preventing burnout (Gould *et al.*, 1996) [2], and increasing the enjoyment of sport participation (Scanlan *et al.*, 1989) [3]. All of those strategies that are being taught during mental-skills training can be carried over into the classroom as well. However, very little research has been conducted on possible fundamental mechanisms for the effects of progressive muscle relaxation technique on mental skills of volleyball players.

**2. Material and Methods Subjects:**

Data were collected on 20 male subjects were selected randomly from calicut university volleyball match practice group in which 10 subjects were in experimental group and 10 subjects acted as control group.

**2.1. Instrumentation**

Hardy and Nelson mental skills questionnaire was used to assess level of mental skills. The questionnaire contains 24 questions measuring six dimensions of mental skills and each dimension is measured by four questions, with a six point likert scale. The six factors of Hardy and Nelson’s mental skills Questionnaire are as follows:

- Imagery ability
- Mental Preparation ability
- Self-Confidence level
- Anxiety and worry Management
- Concentration ability
- Relaxation ability

The questionnaire was administered by the research scholar personally to the subjects. After the selection of subject the scholar made them understand that the purpose of study was to obtain the desired information. Questionnaire was administered to both the groups to obtain the pre-data. After six weeks of psychological skills training to the experimental group, the post data was collected from both the groups and the data was analyzed using SPSS-17 system.

**2.2. Statistical Analysis**

Analysis of covariance was used to determine significant differences for dependent variables within the two groups. When a significant difference among the group was observed, a pair wise comparison of the groups was done by using post-hoc test to identify direction and significant differences

between the groups. The level of significance was set at 0.05 in order to test the differences to be considered significant.

**3. Results**

**Table1:** Univariate test for Imagery Ability among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	75.062	1	75.062	24.009	.000
Error	55.723	17	4.219		

Table 1 reveals that a significant difference (.000) was found in the imagery ability of male volleyball players, as the F-value is 24.009, which is greater than tabulated value at a 0.05 level of significance

**Table 2:** Univariate test for Mental Preparation among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	53.451	1	523.451	13.759	.002
Error	69.892	17	5.113		

Table 2 reveals that a significant difference (.002) was found in the mental preparation of male volleyball players, as the F-value is 13.759, which is greater than tabulated value at a 0.05 level of significance.

**Table 3:** Univariate test for Self Confidence among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	.020	1	.020	.002	.969
Error	221.944	17	13.997		

Table 3 reveals that an insignificant difference (.969) was found in the self-confidence of male volleyball players, as the F-value is .002, which is less than tabulated value at a 0.05 level of significance

**Table 4:** Univariate test for Anxiety and Worry Management among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	1.095	1	1.0965	.072	.791
Error	257.993	17	16.117		

Table4 reveals that an insignificant difference (.791) was found in the anxiety and worry management of male volleyball players, as the F-value is .072, which is less than tabulated value at a 0.05 level of significance.

**Table 5:** Univariate test for Concentration Ability among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	89.697	1	89.697	4.940	.040
Error	308.670	17	18.157		

Table 5 reveals that a significant difference (.040) was found in the concentration ability of male volleyball players, as the F-value is 4.940, which is greater than tabulated value at a 0.05 level of significance

**Table 6:** Univariate test for Relaxation Ability among male volleyball players

	Sum of squares	DF	f mean square	F	sig
Contrast	23.517	1	23.517	3.991	.062
Error	95.912	17	5.642		

Table 6 reveals that an insignificant difference (.062) was found in the relaxation ability of male volleyball players, as the F-value is 3.991, which is less than tabulated value at a 0.05 level of significance.

#### 4. Discussion

Findings of the present study showed that there is significant difference between training group and control group in imagery ability, mental preparation, self-confidence, anxiety and worry management, concentration ability and relaxation ability. When compared the mean values of both the groups, it has been found that open skill athletes, have performed significantly better on imagery ability, mental preparation and concentration ability. The present result also indicates that progressive muscular relaxation technique was effective in improving the imagery ability, mental preparation and concentration ability and mental skill of subjects. Though the pre-test and post-test mean difference between control groups has shown marginal improvement as mean difference was found respectively

These findings substantiate the assertion of Marius *et al.* (2009) that the mental skill training intervention reported a significant increase in personal openness, confidence in sport psychology consulting and a significant decrease of stigma tolerance from pre- to post intervention. A mental skill training intervention appears to be more effective in changing athletes' attitudes toward sport psychology compared with simple providing psycho-educational information about the advantage of mental training. Similar study conducted by Poland (2007) concluded that the use of a mental skills training program may decrease competitive anxiety levels.

Similar trends have been reported by Behncke (2004) studied the mental skills training for sport is reviewed in relation to general cognitive-somatic techniques. These techniques include mental rehearsal, mental imagery and visualization, visual-motor behavior rehearsal, cognitive-behavior therapy, biofeedback, progressive muscle relaxation and meditation. They concluded that the initial and continued ability to self-monitor, though enhanced by mental skills training, is fundamentally important for any implementation of cognitive-somatic therapy.

The findings of the present study were supported by Aufenanger (2005) were found no significant differences between open skill players and close skill players on the variable of mental skills. As concern to mental skills the hypothesis is rejected and open skill players are significantly better as compared to close skill players

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