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 indentify 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 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
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 (Mammassis & 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) [3], performing as well in competition as in practice (Frey et al., 2003) [10], dealing with injury and rehabilitation (Wiese & Weiss, 1987) [6], dealing with personal issues (Papacharisis et al., 2005), preventing burnout (Gould et al., 1996) [10], 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
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 indentify 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

Table 1: Univariate test for Imagery Ability among male volleyball players

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<tr>
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<th>DF</th>
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<td>75.062</td>
<td>24.009</td>
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</tr>
</tbody>
</table>

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

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</table>

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

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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

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Table 4 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

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</table>

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

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</table>

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

5. Acknowledgements
Author is grateful to all the volleyball players of Calicut University, who have given their valuable time out of busy schedule for the study for providing assistance in collecting the relevant information for undertaking quality research.

6. References
5. Orlick T, Partington J. Mental links to excellence. Sport Psychologist 1988; 2(2):105-130