CHAPTER V

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The purpose of this study was to analyze the effect of Interferential therapy, Transcutaneous Electrical Nerve Stimulation, Pulsed Electromagnetic Field Therapy in the management of the Physical, Functional, Psychological aspects or components of pain in sports players.

The review of literature done by the investigator proved that there are number of studies contributed to demonstrate the effectiveness of the selected modalities on non athletes but there was lacking evidence on holistic pain management in sports players and less number of studies contributed to approach the multiple components of pain in physiotherapy, particularly in sports physiotherapy. So the investigator was interested to analyze the effect of Interferential therapy, Transcutaneous Electrical Nerve Stimulation, Pulsed Electromagnetic Field Therapy in the management of the Physical, Functional, Psychological aspects or components of pain in sports players.

In this study, 136 players were selected as subjects were both males and females and were aged between 18 and 32 years and were having complaints of pain due to any sports related musculoskeletal sub-acute and chronic conditions such as soft tissue injuries, first degree strain, first degree sprain, recurrent injuries & strain, overuse syndromes, altered biomechanics and poor posture. They were University level players involved in Cricket, Volley ball, Badminton, Table Tennis, Football, Long distance running, Sprinting, High jump, Long jump, Triple jump, Swimming, Javelin throw, Discus Throw, Weight Lifting, Hockey, Kho
kho, Kabaddi and Basketball. All the were subjects selected on the basis of inclusion criteria and informed consent was taken from all the subjects included in the study.

The study design was Experimental research, Randomized, Controlled clinical study with 4x3 Factorial design with last factor as repeated measures.

The selected subjects were randomly allocated to one of the four groups: Group A – IFT (n=32), Group B – TENS (n=32), Group C – PEMF (n=32) and Group D – Controls (n=32) for the treatment intervention. The evaluation procedure was done using Brief Inventory Pain - short version, Constant shoulder score, Mayo elbow performance score, Back pain functional scale, Foot Ankle disability index – sports module. The data were collected by evaluating and documenting the pre, post test 1 on 6th day and post test 2 scores on 12th day for the following variables: Pain intensity and Pain relief as Physical components of pain, pain interference in general activity, walking ability, outside & household work and recreation & sports as Functional components of pain and pain interference in mood, concentration, sleep, interaction with others as Psychological components of pain. Hence numerical rating scale which was used to document the pain scores may be considered partially as subjective assessment; the Disability Index scores were also documented for all the subjects on 1st day before and 12th day after intervention.

Such collected data were analyzed statistically using Factorial Analysis of Variance and Analysis of covariance to test the significance of difference and the interpreted results were discussed and concluded as following;
CONCLUSIONS

Within the limitations of the study the following conclusions are drawn.

1. It is concluded that there was significant reduction in intensities of pain in Physical, Functional and Psychological components due to PEMF intervention when compared among all the groups.

2. It is concluded that there was no significant reduction in intensities of pain in Physical component due to IFT intervention when compared with the TENS group.

3. It is concluded that there was no significant reduction in intensities of pain in Psychological component such as interference of pain in concentration, sleep, interaction with others due to TENS intervention when compared with the IFT group.

4. It is concluded that there was significant reduction in intensities of pain in Psychological component, interference of pain in mood due to TENS intervention when compared with the IFT group.

5. It is concluded that there was significant improvement in scores of Disability Index of shoulder, elbow, back, knee and ankle & foot regions due to PEMF intervention when compared among all the groups.
RECOMMENDATIONS

Based on the results and conclusions of the study, the following recommendations were drawn:

1. In this present study PEMF was proved effective in management of all the components of pain in sports players. Hence, it is recommended to the sports physiotherapists that PEMF can be included in the regular protocol of pain management in sports physiotherapy.

2. Similarly PEMF can be used to improve the Disability index scores i.e. functionally maximizing the activities so that players can return to sports early after injury or painful episode.

3. In the present study, it is proved that there is no significant difference between the effectiveness of IFT and TENS in pain management of players. So, a similar study may be conducted using large samples to identify the difference in IFT and TENS.

4. A similar study may be attempted by selecting the state or national level players as subjects.

5. A similar study may be conducted by selecting only male or only female players as subjects to compare gender wise pain perception and response to the selected modalities.