CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

Game of Basketball and Volleyball skills involved in jumping, ball handling, fast movements, which resulted knee injuries, ankle injuries and shoulder injuries. For instance, Jumpers knee is a painful chronic overuse injury of the extensor mechanism of the knee joint. The disease has a high incidence in jumping sports and depends on training frequency and level of performance. Its natural course is protracted, repetitive, and often bilaterally occurring. Its etiology is a chronic overload of the knee extensor mechanism which is triggered by jumping sports (volleyball, basketball etc.) as well as different intrinsic (ligamentous laxity, Q-angle, patella height, tenderness, pattern of force development) and extrinsic dispositions (frequency of training, level of performance, hardness of underground).

These sports injuries are broadly classified into mild injuries and serious injuries and under mild injuries soft tissue injuries and skin injuries are very common among sportspersons. Since the game, volleyball and basketball involves speed of movements, jumping and ball shooting soft tissue injuries of ankle, knee and shoulder are very common. The investigator investigated to study the suffering of the players’ soft tissue injuries and the treatment. These players could not perform their skill in the game situations, in turn resulted in poor performance. It was also observed this situation even
make the players were affected due to the injuries and were unable to participate in the prestigious competitions. Missing the chance of playing, this causes severe stress among the players. Moreover, the treatment for the injury and recovery take more than a month’, by the time the performance level will come down drastically. There is different physiotherapy methods are being used to treat the soft tissue injuries of the players. They are ultrasound therapy, wax bath and massage, apart from electrotherapy such as short wave diathermy, transcutaneous electrical stimulation (TENS), galvanic stimulation (GS), percutaneous electrical stimulation (PENS), neuromuscular electrical stimulation (NMES), interferential current therapy (IFT), microcurrent therapy, electro-acupuncture (EA), spinal cord stimulation (SCS), transcutaneous spinal electroanalgesia (TSE)

To facilitate for speedy recovery from the injury, it is much essential to select the right treatment. In this research the researcher is interested to find out effect of short wave diathermy (one of the electrotherapy methods), ultrasound therapy, a therapy using ultrasound and wax bath and massage, a therapy used through wax followed by massage on selected soft tissue injuries of ankle, knee and shoulder. More than 70 players reported problems of shoulder, knee and ankle soft tissue injuries. Such players with the consent of the authorities were carefully tested through qualified Medical Officer and Physiotherapist to identify the nature of their ailments. Based on the reports and classification of the injuries, the players having soft tissue injuries of shoulder, knee and angle joints were selected for this study. Among the soft tissue injured players, the investigator randomly selected 18 rotator cuff tear injured; 18 anterior cruciate ligament injured and 18 ankle sprained, consisting volleyball players
and basketball players. Each of the 18 injured players of volleyball and basketball were randomly divided into three groups, namely, short wave diathermy treatment group, ultrasound therapy treatment group and wax bath and massage treatment group consisting of 6 injured players in each. The age of the subjects selected was between 20 to 27 years. Experimental group I was given short wave diathermy, experimental group II underwent ultrasound treatment, experimental group III underwent wax therapy and massage. The experimental treatments were given to the subjects as per description and supervision of the experienced physiotherapist and medical doctor, for fifteen days continuously. All the subjects were tested prior to treatment and after completion of fifteen days of treatment on selected variables dependent variables, namely, perceived pain, swelling and range of motion using standard methods and the reliability of the data collected were ascertained during pilot study phase. The difference between initial and final means of pain, swell and range of motion were considered as the effect of selected treatment on selected injury. To test the significance of the difference in means due to each treatment on each of the injury, dependent ‘t’ test (pre test and post test means) was used. To find out the significance of the difference among the three different treatments on a particular dependent variable, Analysis of Covariance (ANCOVA) was used. In all cases, 0.05 level was fixed to test the hypothesis.

The results proved that short wave diathermy, ultrasound therapy and wax bath and massage treatments significantly reduced swelling, perceived pain and improved range of motion of rotator cuff tear, anterior cruciate ligament and ankle sprain of volleyball and basketball players. The comparative effect of the treatments on swelling
of the rotator cuff tear, anterior cruciate ligament and ankle sprain of volleyball and basketball players proved as there was no significant difference among the groups. The comparative effect of the treatments on perceived pain of the rotator cuff tear, anterior cruciate ligament and ankle sprain of volleyball and basketball players proved as there was no significant difference among the groups. The comparative effect of the treatments on range of motion of the rotator cuff tear, anterior cruciate ligament and ankle sprain of volleyball and basketball players proved as there was significant difference among the groups and wax bath and massage groups was found to be superior than other groups.

5.2 CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that short wave diathermy treatment significantly reduced swelling, perceived pain and improved range of motion of rotator cuff tear, anterior cruciate ligament and ankle sprain of basketball and volleyball players.
2. It was concluded that ultrasound therapy treatment significantly reduced swelling, perceived pain and improved range of motion of rotator cuff tear, anterior cruciate ligament and ankle sprain of basketball and volleyball players.

3. It was concluded that wax bath and massage treatment significantly reduced swelling, perceived pain and improved range of motion of rotator cuff tear, anterior cruciate ligament and ankle sprain of basketball and volleyball players.

4. It was concluded that there was no significant difference in reducing swelling of rotator cuff tear, anterior cruciate ligament, ankle sprain injuries by experimental treatments, namely, short wave diathermy, ultrasound therapy and wax bath and massage.

5. It was concluded that there was no significant difference in reducing perceived pain of rotator cuff tear, anterior cruciate ligament, ankle sprain injuries by experimental treatments, namely, short wave diathermy, ultrasound therapy and wax bath and massage.

6. It was concluded that there was significant difference in improving range of motion of rotator cuff tear, anterior cruciate ligament, ankle sprain injuries by experimental treatments, namely, short wave diathermy, ultrasound therapy and wax bath and massage.

7. It was concluded that comparing between the treatment groups, wax bath and massage group was significantly better than short wave diathermy and
ultrasound therapy in improving range of motion of rotator cuff tear, anterior cruciate ligament and ankle sprain.

5.3 RECOMMENDATIONS

The findings of this study proved, wax bath and massage, a manual therapy for muscle and soft tissue pain and weakness, and are a popular and widely used modality for recovery and improve range of motion. Hence, it was recommended to treat soft injuries through wax bath and massage than other modalities.

It was recommended to the coaches and players to treat the soft tissue injuries through therapeutic measures rather than surgical options.

Advantages of wax bath and massage may be popularized among sports scientists, physicians, players and others so that they could treat the injuries in a more natural way.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

1. Further investigation using standardized protocols measuring similar outcome variables is necessary to more conclusively determine the efficacy of wax bath and massage and the optimal strategy for its implementation to enhance recovery following intense exercise.
2. A further research with a larger sample may be conducted to support the findings of this study.

3. A study with increased variable control is needed as the mechanisms behind the effects of wax bath and massage remain unclear.

4. In this study, only men volleyball and basketball players were selected, a similar study may be conducted among women volleyball, basketball and athletes.

5. A similar research involving similar other protocols of therapy may be studied for the benefit of the players.