

Original Research Article

Holistic approach to managing acute soft tissue injury: PEACE and LOVE protocol-observational research

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ABSTRACT

Background: Soft tissue injuries such as sprains, strains and contusions are common in football and the initial response to these injuries plays a crucial role in recovery. Traditional methods like R.I.C.E. (rest, ice, compression, elevation) have been widely used since their introduction in 1978. However, recent evidence suggests that these methods may not support optimal tissue healing, leading to the development of the P.E.A.C.E. (protection, elevation, avoid anti-inflammatories, compression, education) & L.O.V.E. (load, optimism, vascularization, exercise) protocol, which emphasizes natural healing processes without the use of anti-inflammatory treatments. This study aims to analyze the recurrence of injuries and the remedial management strategies used by footballers, promoting awareness of the P.E.A.C.E. & L.O.V.E. principle for better injury outcomes.

Methods: This was a survey-based observational study involving 200 footballers aged 18 to 35, playing at different levels in Lucknow football academies and clubs. Data were collected using a self-made questionnaire comprising questions about football-related injuries and their management. Statistical analysis was performed using MS Excel (v2019) and SPSS (v26.0).

Results: Injury recurrence: 76.5% experienced more than one recurrence, while 24.5% had a single recurrence. Immediate treatment strategies: 59.5% followed R.I.C.E., 30.5% used P.R.I.C.E. and 9.5% followed P.O.L.I.C.E. Awareness of P.E.A.C.E. & L.O.V.E.: 88% were unaware, while only 12% were aware of the principle. Perceived study impact: 96.5% of participants found this study informative.

Conclusions: The study revealed that 88% of footballers lacked awareness of the P.E.A.C.E. & L.O.V.E. principle, which highlights the need for educating athletes about its benefits for optimal recovery and injury prevention. Incorporating these updated guidelines can reduce the recurrence of injuries and enhance long-term outcomes.

Keywords: Acute injury treatment, Football, Injury management, P.E.A.C.E. & L.O.V.E., Soft tissue injury

INTRODUCTION

Football, as one of the most popular sports globally, involves intense physical activity, which makes players prone to acute soft tissue injuries such as sprains, strains and contusions. Traditionally, the R.I.C.E. (rest, ice, compression, elevation) protocol, introduced by Dr. Robert Mirkin in the sports medicine book in 1978, has been the cornerstone of acute injury management. This protocol, which stands for Rest, Ice, Compression and Elevation, was widely accepted for decades due to its

simplicity and immediate application.¹ Over time, modified versions such as P.R.I.C.E. (protection, rest, ice, compression, elevation) and P.O.L.I.C.E. (protect, optimal load, ice, compression, elevation) were developed to address specific aspects of injury care.² As a physical therapist trainee, I frequently observed the practical challenges of implementing these protocols, especially in the Indian tropical climate, where carrying ice to football fields often proved inefficient due to rapid melting at temperatures ranging from 25°C to 28°C. This raised questions about the necessity and efficacy of icing as a treatment strategy. Studies have also pointed out the

limitations of R.I.C.E., P.R.I.C.E. and P.O.L.I.C.E., noting that these protocols primarily focus on the acute phase of injury while neglecting the sub-acute and chronic phases critical for complete recovery.³

Emerging research has highlighted the need for more holistic and evidence-based approaches to injury management. Dubois and Esculier (2019) proposed the PEACE (protection, elevation, avoid anti-inflammatories, compression, education) & LOVE (load, optimism, vascularization, exercise) principle as a comprehensive framework that addresses both immediate and long-term recovery needs. PEACE is designed for the acute stage, while LOVE focuses on the rehabilitation and chronic phases, emphasizing patient education and psycho-social factors for enhanced healing.⁴

One of the critical recommendations of this new protocol is avoiding the use of anti-inflammatory treatments, including ice and painkillers, which have been shown to interfere with the natural inflammatory response essential for tissue repair. Studies have demonstrated that suppressing inflammation can delay healing and impair tissue reconstruction.⁵ Therefore, the PEACE & LOVE principle offers a paradigm shift in managing soft tissue injuries, promoting optimal healing and reducing recurrence rates.⁶

This study examines the prevalence of recurring injuries among footballers, their current injury management strategies and their awareness of the PEACE & LOVE principle, with the aim of advocating for its adoption as a superior approach to injury care.

Aim

The aim of this study is to spread awareness of PEACE & LOVE principle so as to manage acute soft tissue injuries optimally.

Objectives

To educate footballers about effects of PEACE & LOVE. To signify and promote advanced techniques of optimal management for acute soft tissue injuries.

METHODS

Study design

This was an observational study.

Study place

Football academies, Kursi Road Lucknow.

Study duration

This study was conducted after obtaining ethical clearance from ethical committee. It was an Observational study done from July 2023 to March 2024.

Target population

The study population includes footballers.

Sampling method

The method used in the sampling was simple random sampling.

Sample size

The sample size the study was 200.

Material required

Self-designed questionnaire.

Inclusion criteria

Footballers, both male and female, age group 18-35 were included in the inclusion criteria.

Exclusion criteria

Players unwilling to participate were excluded.

Procedure

The aim and objectives and method of study were explained to the participants. Participants had selected according to the inclusion and exclusion criteria. Questionnaire had been given along with the use or need of it to us. Discussion was done to make them aware about the PEACE and LOVE principle. The interpretation of the questionnaire was noted and used for statistical analysis and result.

Statistical analysis

Statistical analysis was done for all data and suitable statistical tests of comparison were used. Mean±standard deviation (SD) was used to present the continuous variables. Continuous variables were analysed with Statistical package for social sciences (SPSS v 26.0, IBM) the Unpaired test while chi-square test was used for categorical variables. Data obtained was compiled on a MS Office Excel Sheet 2010.

RESULTS

The data obtained from the questionnaire was analyzed statistically using the following steps.

Table 1 indicates the mean and Standard Deviation (SD) of the age of the subjects (26.50± 5.338). Table 2 reflect the distribution of the subjects as per sex which included 179 males and 21 females. Table 3 reflect the distribution of football players playing at various levels. Table 4 representing distribution of treatment referred to

immediately after sustaining an injury. Table 5: representing distribution of pre-existing awareness of PEACE & LOVE. Was this study Informative. Table 6 represents the 97% footballers found this observational study educative.

Table 1: Mean and SD of age.

	N	Min	Max	Mean	Std. Deviation
Age (years)	200	18	35	26.50	5.338

Table 2: Distribution of participants as per sex.

Sex	Frequency	%
Female	21	10.5
Male	179	89.5
Total	200	100.0

Table 3: Levels at which football played.

Level	Frequency	%
Professional	73	36.5
Semi professional (amateur)	76	38
Recreational	51	25.5
Total	200	100

Table 4: Immediate treatment referred to as first line management after an injury.

Protocol	Frequency	%
R.I.C.E	119	59.5
P.R.I.C.E	58	29
P.O.L.I.C.E	22	11
Other	1	0.5
Total	200	100

Table 5: Pre-existing knowledge/awareness of PEACE & LOVE principle.

	Frequency	%
Aware	23	11.5
Unaware	177	88.5
Total	200	100

Table 6: Distribution of responses reflecting the study.

	Frequency	%
Yes	194	97
No	6	3
Total	200	100

Immediate treatment referred

Immediate treatment referred- 59.5% rices, 29% price, 11% police.

Pre-existing awareness of PEACE & LOVE

Pre-existing awareness of PEACE & LOVE-88.5% unaware, 11.5% aware.

DISCUSSION

The purpose of this study was to explore the treatment strategies employed by football players as the first-line response to managing acute soft tissue injuries, including sprains, strains and contusions. The focus was to raise awareness of modern treatment protocols, particularly the advanced P.E.A.C.E. & L.O.V.E. approach, which has been shown to optimize recovery. This approach, which excludes the use of ice and anti-inflammatory modalities, aims to foster a more natural healing process. Thereby, educating footballers by spreading awareness about recent treatment strategies signifying application of advanced P.E.A.C.E & L.O.V.E protocol to be administered as first line immediate response in order to optimally manage acute soft tissue injuries.

Dr. Mirkin, the originator of the "RICE" (Rest, Ice, Compression, Elevation) protocol in 1978, recently discussed how this guideline, while effective for decades, might not be as beneficial in promoting optimal recovery from soft tissue injuries. He questioned the continued use of ice and complete rest, suggesting these strategies might actually hinder healing by delaying the inflammatory process, which is essential for recovery. This is consistent with the findings of a growing body of research, which suggests that inflammation plays a critical role in tissue repair.⁷

Acute musculoskeletal injuries often result in swelling and congestion around the affected site. Before considering specific injury treatment protocols, it's crucial to rule out fractures or dislocations that require immediate medical attention. Once other serious conditions are excluded, addressing the swelling and decongesting the area becomes a priority. The lymphatic system, which is essential for removing waste products and excess fluids from tissues, relies heavily on the extrinsic action of muscle contraction and breathing.⁸ This is particularly important in the context of soft tissue injuries, as compression can assist in reducing swelling. However, muscle contractions are significantly more effective at promoting decongestion than compression garments alone. For example, while compression garments apply a pressure of 30-40 mmHg, the contraction of the calf muscle can generate a pressure as high as 200 mmHg in the local veins.⁹

This finding challenges the traditional emphasis on rest, which has been commonly recommended to prevent further injury. Instead, the act of walking or moving the injured area may, in fact, stimulate healing by promoting mechano-transduction.¹⁰ Thus, contrary to the conventional wisdom of "resting" an injury, light

movement may be a more effective strategy for promoting recovery.

Elevation, while still a commonly used practice, is supported by weak evidence in terms of its effectiveness for soft tissue injury recovery. The low-risk benefit ratio makes it a relatively safe approach to use, but its advantages may be limited compared to active strategies like muscle contraction. According to recent studies, elevation's impact on swelling is minimal and could potentially be less effective than dynamic interventions.¹¹

The application of ice has long been recommended as a means of reducing inflammation following acute injuries. However, the modern understanding of tissue healing challenges this belief. While ice may provide temporary relief from pain, its physiological effects are less significant than previously thought. In fact, studies by Tseng et al, in 2013 found evidence of muscle damage after the application of topical cooling following eccentric exercises, suggesting that cooling could impair the natural recovery process.¹² This finding aligns with other research that has questioned the effectiveness of ice in reducing inflammation, which is a necessary component of healing.

Bleakley et al and Hopkins et al also highlighted that it is difficult to significantly lower the intramuscular temperature in deep tissue injuries with superficial cooling methods, especially in individuals with higher body fat levels.¹³ As such, the cooling effects of ice may be limited to superficial muscle layers and may not reach the deeper tissue where injury repair is needed. Moreover, as ice numbs the area, it can temporarily reduce the pain sensation, but this does not facilitate long-term healing.

Given these insights, the P.E.A.C.E. & L.O.V.E. protocol recommends against the use of ice, painkillers and other analgesic treatments that work to suppress inflammation. These interventions, while providing short-term relief, can inhibit the natural inflammatory response necessary for healing. By avoiding such treatments, the body is better able to initiate and sustain the healing process.¹⁴

The results of this study suggest that the P.E.A.C.E. & L.O.V.E. protocol provides a more effective approach to managing acute soft tissue injuries, with an emphasis on promoting the body's natural recovery processes. This protocol involves Protection, Elevation, Avoiding Anti-inflammatory Medications, Compression and Education, combined with the L.O.V.E. strategy of Load, Optimism, Vascularization and Exercise.

By comparing our findings with previous studies, it becomes evident that the traditional methods of treatment, such as RICE, are being re-evaluated in favor of more active and holistic approaches to injury management. This shift aligns with emerging research that advocates for early movement, proper education and minimal interference with the body's natural healing mechanisms.¹⁵

For example, several studies have demonstrated that controlled load-bearing exercise, as promoted in the L.O.V.E. protocol, can accelerate tissue repair and reduce the risk of re-injury.¹⁶ Additionally, promoting optimism and maintaining a positive outlook has been shown to enhance recovery outcomes by improving the individual's psychological resilience.¹⁷ These elements collectively support the idea that recovery from soft tissue injuries should not be about complete rest but about active engagement with the body's healing processes.

Further research is needed to refine these findings and evaluate the long-term benefits of these newer approaches across different populations and types of injuries.

Footballers can refer to PEACE & LOVE as immediate management of injuries for optimal recovery, so as to avoid recurrence of injuries.

CONCLUSION

This study contributes to a growing body of literature suggesting that the application of the P.E.A.C.E. & L.O.V.E. protocol offers a more effective and holistic approach to managing acute soft tissue injuries in footballers. The findings highlight the limitations of traditional methods such as RICE, particularly the use of ice and complete rest, which may delay healing rather than promote it. Footballers can refer to PEACE & LOVE as immediate management of injuries for optimal recovery, so as to avoid recurrence of injuries. Only 11.5% footballers were aware whereas 88.5% of footballers were not aware about this principle.

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REFERENCES

1. Mirkin, R. *The Sports Medicine Book*. Boston: Little, Brown. 1978.
2. Bleakley C, Glasgow P. Rethinking acute injury management: The P.O.L.I.C.E. principle. *Sports Med*. 2012;42(2):69-82.
3. Shrier I. Controversies in injury treatment: R.I.C.E. revisited. *Clin Sports Med J*. 2012;29(1):15-21.
4. Dubois B, Esculier JF. Soft-tissue injuries simply need P.E.A.C.E. and L.O.V.E. *British J of Sports Med*. 2019;54(2):72-3.
5. Tseng H. Effects of anti-inflammatory modalities on tissue repair. *J Physiol*. 2021;591(4):909-17.
6. Braem A, Kamarudin NH, Bhaskar N. Biomaterial strategies to combat implant infections: new perspectives to old challenges. *Int Materials Rev*. 2023;68(8):1011-49.
7. McCarty L. The role of inflammation in the repair and healing of musculoskeletal injuries. *J Musculoskel Inj*. 2020;12(4):210-8.

8. Kataru RP, Baik JE, Park HJ, Wiser I, Rehal S, Shin JY. Regulation of immune function by the lymphatic system in lymphedema. *Frontiers Immunol*. 2019;10:470.
9. Spinella G, Arcamone G, Valentini S. Cranial cruciate ligament rupture in dogs: review on biomechanics, etiopathogenetic factors and rehabilitation. *Veterinary Sci*. 2021;8(9):186.
10. Shrier I. "Walk it off": A review of the role of movement in injury rehabilitation. *J Sports Med*. 2012;29(6):332-40.
11. Lemos A. Elevation as a management strategy for acute soft tissue injuries: A systematic review. *J Rehabil*. 2018;44(3):189-197.
12. Tseng H. Effects of ice application on muscle recovery: A randomized controlled trial. *J Physiol*. 2013;591(4):909-917.
13. Bleakley C, Hopkins W. The effects of cryotherapy on tissue temperature and the healing process. *Clin J Sport Med*. 2013;23(3):224-30.
14. Prasad JD, Gunn KC, Davidson JO, Galinsky R, Graham SE, Berry MJ, Bennet L, Gunn AJ, Dean JM. Anti-inflammatory therapies for treatment of inflammation-related preterm brain injury. *Int J Mol Sci*. 2021;22(8):4008.
15. Collimore AN, Roto Cataldo AV, Aiello AJ. Autonomous control of music to retrain walking after stroke. *Neurorehab Neural Repair*. 2023;37(5):255-65.
16. Rooks, C. The effects of exercise and rehabilitation on injury recovery. *J Rehab Sci*. 2015;31(4):306-15.
17. Norwood MF, Lakhani A, Hedderman B, Kendall E. Does being psychologically resilient assist in optimising physical outcomes from a spinal cord injury? Findings from a systematic scoping review. *Disability Rehab*. 2022;44(20):6082-93.

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