

The effects of sports Chiropractic intervention on prevention of lower back pain in elite soccer players

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Soccer is highly competitive and thus intensely pragmatic, Low back pains in soccer players are a common occurrence and one of the frequently appearing disorders caused by high levels of repetitive loading and lateral movement involved in the sport. These forces can cause injuries including stress fractures, muscle spasms, and even disc herniation. Many of these injuries can be prevented with sports chiropractic. The goal of this study was to identify the effects of effect of sports chiropractic on the primary prevention of low back pains for elite soccer players. Ninety professional soccer players were divided into two groups: experimental (n = 11) and control (n = 8), each group trained five times a week for eight weeks, with all types of training being performed in the same session. Parameters assessed the height, weight, training experience and low back pains. The results revealed significant differences between pre- and post-competition measurements of flexibility and sorence test. In conclusion, sports chiropractic could reduce the feeling of lower back pains and improvement the flexibility.

Key words: sports chiropractic, flexibility, low back pain, professional soccer players

Introduction

Because of Soccer is highly competitive and thus intensely pragmatic, Low back pains in soccer players are a common occurrence and one of the frequently appearing disorders caused by high levels of repetitive loading and lateral movement involved in the sport. These forces can cause injuries including stress fractures, muscle spasms, and even disc herniation. Many of these injuries can be prevented with sports chiropractic.

The most common back injury in soccer is muscle spasms in the lumbar spine. A fall or a quick motion, such as a slide tackle or hard kick usually causes

these. Usually the pain comes on immediately following one of these issues and the back feels stiff and tight with pain in the area of the muscles on either side of the spine. The common treatment in soccer with ice, immediately followed by light stretching as mobility improves and the pain starts to weaken. The researcher believed that sports chiropractic with core strengthening could help to prepare these muscles for activity and decrease the chances of incurring this injury.

The incidence of back pain in professional athletes is reportedly as high as 75% per year. (Semon, & Spengler 1981) this is especially true in soccer game.

Chiropractic was founded as a health profession in the US in 1895 by a Canadian called Daniel David Palmer, who had no conventional medical training. Chiropractic sports medicine specialists first began treating Olympic athletes at the Olympic Games in Montreal, in 1976. In 2002, 31% of National Football League teams used a chiropractor in an official capacity on their medical staff. (Moreau, et al. 1991)

A study analyzing Division I NCAA college athletes at inter-college sporting events in Hawaii found that chiropractic usage within the last 12 months was reported by 39% of respondents. (Nichols & Harrigan 2006). And although, both the amateur and professional levels for men and women, has produced a corresponding interest among athletes in chiropractic treatment. (Greenberg, 1996: John, Daniel 2002).

The number of studies that dealt with chiropractors in the prevention of sports injuries is very little, and we still need to conduct more research to support and document the role of chiropractors in the reduction and prevention of sports injuries occur in athletes. (Wayne & Henry, 2011)

Even this time in Arab countries generally and especially United Arab Emirates the sports chiropractic science still not known in the sports field.

So, our objective was to investigate the effect of sports chiropractic on the primary prevention of low back pains for elite soccer players.

Material and Methods

Participants

Ninety professional soccer players from Agman club, United Arab Emirates were divided into two groups: experimental (n = 11) and control (n = 8), Each group trained five times a week for eight weeks, with all types of training being performed in the same session. Parameters assessed the height, weight, training experience and low

back pains. All subjects were free of any disorders known to affect performance, such as bone fractures, osteoporosis, diabetes, and cardiovascular disease, and had not undergone recent surgery. The participants did not report use of any anti-seizure drugs, alcohol and cortison consumption, nor cigarette smoking. All participants were fully informed about the aims of the study and gave their voluntary consent before participation. The measurement procedures were in agreement with ethical human experimentation.

Procedures

The evaluations on the flexion and extension range of motion of the lumbar spine were made using a simple goniometer after instructing the volunteer regarding positioning and the correct way of doing the test. The individuals began the test in an upright standing position, with the knees completely extended and arms in front of the body. Then, upon a verbal command from the examiner, they made slow and gradual movements for flexion and extension as far as the maximum amplitude, at which point the goniometer measurement was made. To evaluate lumbar flexion, the arms had to be flexed at 90 degrees, and to evaluate lumbar extension, the arms had to be kept fixed behind the neck. For these measurements, the iliac crest was taken as the fixed reference point, while the mobile point used was the axillaries line collateral to the iliac crest anteriorly, such that the fixed arm of the goniometer remained central in the lateral region of the trunk. (Carla, et al. 2010)

Sorensen's Test

This test measures the time a subject can keep the unsupported trunk (from the upper border of the iliac crest) horizontal while lying prone on an examination table until they can no longer control the posture, or can no longer tolerate the procedure or until symptoms of fatigue are reached. (Moreau et al. 2001) Of the assessment

strategies available, isometric endurance testing seems to be cost-effective and requires little or no equipment at all.

The procedure was carried out as follows:

- ❖ The subjects had to lie prone on a plinth with the trunk (from the upper border of the iliac crest) unsupported, with the hands either behind the head or placed across the chest
- ❖ The researcher held down the subjects' legs with the researcher's body weight This was done to reduce time in the patient set-up when performing the test

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference $\pm 95\%$

- ❖ The subjects were required to extend the trunk until the back was in line with the rest of the body
- ❖ This position was to be maintained until the posture could no longer be controlled, or no more tolerance for the procedure or symptoms of fatigue are reached
- ❖ The examiner recorded the time held by each patient (in seconds) for the test. A Swatch Irony watch was used to record the times for all athletes to maintain continuity.

Statistical Analysis

confidence intervals (mean diff $\pm 95\%$ CI). Student's T-test for independent samples was used to determine the differences in physical and Sorensen's parameters between the two groups. The level of significance was set at $p \leq 0.05$.

Table 1. Anthropometric characteristics of the studied athletes

Variables	N	Age (years)	Body mass (kg)	Body height (cm)	Training experience (years)
experimental group	11	22.43 \pm 2.45	75.94 \pm 10.23	179.88 \pm 7.95	10.23 \pm 2.11
Control group	8	24.43 \pm 4.68	76.23 \pm 11.66	180.36 \pm 8.03	12.65 \pm 1.93
Total	19	21.15 \pm 1.9	76.54 \pm 9.1	178.22 \pm 8.2	8.15 \pm 3.4

Table 1 shows the age and training experience of the subjects. No significant differences were observed in

the age, anthropometric characteristics or training experience of the subjects in the two groups.

Table 2. Flexibility variables and sorence test for the control and experimental groups

Variables	pre*	Control post*	change%	pre*	Experimental post*	change%	P
Goniometer flexion	10.15 \pm 110.21	7.87 \pm 112.38	1.99	9.13 \pm 109.7	8.58 \pm 117.25	5.71	0.05
Goniometer extension	6.68 \pm 38.64	5.45 \pm 40.11	0.14	3.54 \pm 37.65	6.32 \pm 44.23	17.07	0.01
Sorensen's Test	4.91 \pm 40.11	4.38 \pm 42.59	6.18	7.98 \pm 41.76	9.64 \pm 52,27	12.62	0.01

*All results are presented as mean \pm SD

Table 2 shows significant differences that were observed in Goniometer flexion, Goniometer extension, Sorensen's Test for the experimental group.

Discussion

The goal of this study was to identify the effects of sports chiropractic on the primary prevention of low back pains for elite soccer players. The results indicated that sports chiropractic reduced low back pain levels and

improvement of Goniometer flexion& extension

These results support the hypothesis that sports chiropractic could be used in the primary prevention of low back pains for elite soccer players.

Chiropractic is a healthcare profession. There is good evidence that manual therapy which may include spinal manipulation – as practiced by chiropractors – can be an effective treatment for persistent lower back pain.

According to the General Chiropractic Council (GCC), chiropractic is "a health profession concerned with the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, and the effects of these disorders on the function of the nervous system and general health".

Many studies have concluded that manual therapies commonly used by chiropractors are generally effective for the treatment of lower back pain. (Rubinstein, et. al, 2010; Dagenais, et al. 2010). As well as for treatment of lumbar herniated disc for radiculopathy. (Leininger, et al. 2011; Hahne, et al. 2010) and neck pain, among other conditions. (Bronfort, et al. 2010)

Generally, chiropractors maintain a unique focus on spinal manipulation and treatment of surrounding structures.

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Chiropractic care can bring about symptom relief from health conditions as mundane as muscle soreness and as problematic as Parkinson's disease, while also being associated with some major effects on many other physical (and mental) health issues like cancer, vertigo, and even blindness!

Now, the modern medical world is starting to understand the effects of this holistic, alternative treatment choice, perhaps because chiropractic care's long-term health benefits are being properly recognized across the medical spectrum.

Practical Applications

Sports chiropractic could reduce the feeling of lower back pains and improvement the flexibilit.