

# A Descriptive Study of Sports Chiropractors

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## Research Article

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# Abstract

## BACKGROUND:

This paper describes the education and case management profile of sports chiropractors with the Federation of International Sports Chiropractors (FICS) postgraduate qualification: International chiropractic sport science practitioner (ICSSP). The ICSSP is the predominant international sports chiropractic qualification.

## METHODS:

A 39-item web-based survey examining practitioner, practice and clinical management characteristics was distributed via email to all sports chiropractors who hold an ICSSP (n = 240) in 2015.

## RESULTS:

The survey response rate was 64% (n = 154). The average age of the chiropractors was 31-40 years, just over three quarters were male and have been in practice for 5-10 years. The majority of respondents were based in North America.

Sports chiropractors treat a wide range of musculoskeletal conditions with multimodal care (active and passive) and treat professional, semi-professional and Olympic athletes. Sports chiropractors have referral and co-management relationships with a range of conventional and allied health providers.

## CONCLUSIONS:

There is often a lack of knowledge and misinformation about the background of sports chiropractors. This study refutes a number of commonly held misbeliefs, and describes a workforce that is well educated, treat high-level athletes, utilise a multimodal approach to management, treat a wide variety of non-spinal musculoskeletal conditions, frequently prescribe rehabilitative exercise, and refer to and co-manage with other members of the sports medicine team.

***Trial registration:*** This study was approved by the RMIT University, SEH College Human Ethics Advisory Network (ASEHAPP 52-14 AMES)

# Background

The International Federation of Sports Chiropractic / Fédération Internationale de Chiropratique du Sport (FICS), founded in 1987, is comprised of national chiropractic sports councils worldwide and has affiliations with international organizations within the chiropractic profession and the world of sports. FICS has created an educational program for practitioners attending sporting events that consist of a post-professional program comprising of: an online educational component, a hands-on component and a field base experience requirement.

In the past 30 years, sports have developed to such a degree that professions involved in the sports health care team have all evolved sports speciality groups (medicine, physiotherapy, sports sciences, nutrition, podiatry and psychology).(1–5) For many years amateur, professional and now Olympic teams have utilised chiropractic care in the form of sports chiropractors.(6, 7) This inclusion has typically been at the insistence of athletes rather than with the acceptance of others in the sports medicine team, however many athletes have been denied access to chiropractic care even when requested. What has changed in recent years is that sports chiropractors are now fully integrated into many sports medicine teams, up to and including major national and international games.(7, 8) At the 2010 Winter Olympic Games in Vancouver, the 2012 Summer Olympic Games in London, and the 2016 Summer Olympic Games in Rio De Janeiro sports chiropractors were included in the Olympic Village Polyclinic, the multi-disciplinary facility that offers health care and medical services to Olympic athletes, officials, and staff.

The chiropractic profession focuses on the neuromusculoskeletal conditions of the body, primarily the spine. It utilises a multimodal approach informed by the biopsychosocial model of disease. The sub speciality of sports chiropractic concerns itself with the management of those persons that participate in sports at all levels. The management differs from that of the general chiropractor as sports chiropractors give consideration to both the hard and soft/connective tissues (muscle, tendon, ligament, fascia etc) whilst often supplementing passive approaches to care with active care prescription.(2, 9)

Sports chiropractors are often considered to be uni-modal practitioners with limited regard for orthodox medical approaches.(2) However the literature shows that chiropractors are not limited to a manipulation-only approach, with the majority of treatments being multi-modal. (10)

The aim of this study was to describe the practice characteristics of sports chiropractors in the FICS organisation. An online questionnaire format was used to assess the educational and practice characteristics of FICS based sports chiropractors. The survey specifically aimed to determine the general demographics of this group, the conditions they treat, the modalities and adjuncts they use, their involvement with high-level athletes, and their integration with other health professionals.

## Methods

This study was approved by the RMIT University, SEH College Human Ethics Advisory Network (ASEHAPP 52 – 14 AMES). The design consisted of a cross-sectional self-report web survey of sports chiropractors in the FICS organisation who held either of the FICS qualifications.

We included all those with an International Chiropractic Sport Science Practitioner (ICSSP) or the precedent qualification International Chiropractic Sport Science Diploma (ICCSD). Both courses had the same requirements despite the name change to the qualification.

Permission was granted from the FICS executive to email the 39-item web-based survey to the 240 chiropractors with a FICS qualification on their database (2015). Three emails were sent over the course of two months, with a 64% (n = 154) response rate. Descriptive statistics were performed by SPSS.

# Results

According to the survey data, the typical sports chiropractor is male (78% of applicants, Table 1), aged 31–40 (36.4%, Table 1) and has spent 5–10 years in clinical practice (27.3%, Table 1). The majority of respondents practice in North America (37%, Table 1), with Europe (27.3%) and Oceania (25.3%) also well represented.

Table 1  
Demographics

Age group	N	%
Male	120	78
Female	34	22
<b>Age group</b>		
21–30	27	17.5
31–40	56	36.4
41–50	33	21.4
51–60	34	22.1
61–70	4	2.6
71–80	0	0
<b>Years in practice</b>		
0–5	28	18.2
5–10	42	27.3
10–20	38	24.7
20–30	35	22.7
30 + years	11	7.1
<b>Location of practice</b>		
Asia	5	3.3
Africa	9	5.8
Europe	42	27.3
North America	57	37.0
South America	2	1.3
Oceania	39	25.3

In addition to completing their ICSSP, 31.8% of sports chiropractors surveyed have completed a post-graduate certificate relevant to sports chiropractic. Furthermore, 23.4% have completed a post-graduate diploma, 16.9% a Masters and 2.6% a PhD in the field of sports chiropractic.

The overwhelming majority of chiropractors surveyed read health care related research (95.5%), with an average weekly time of 2.5 hours (95% CI 2.35–3.43) spent reading 2.9 research articles (95% CI 1.96–2.96) related to sports chiropractic.

20.1% of the sports chiropractors surveyed currently work with a sports team full time, and 33.8% of those surveyed have done so at some stage in the past. 63.6% of chiropractors currently treat professional and 77.9% treat semi-professional athletes, whilst the vast majority of those surveyed have treated professional (90.9%) and semi-professional (94.8%) athletes in the past. 38.3% currently treat Olympic level athletes, and 63.6% have treated them in the past.

Adjustments (aka specific high velocity, low amplitude manipulation), both spinal and peripheral, are commonly used modalities by sports chiropractors, with 100% and 99.4% of sports chiropractors surveyed utilising these methods on their patients (not necessarily all patients).

Most chiropractors are multimodal in their approach, with 90.9% surveyed using multiple modalities on the majority of their treatments. Other commonly used techniques include soft tissue therapy (97.4%), mobilisation (93.5%), kinesiotaping (90.9%), low force techniques (90.3%) and instrument assisted soft tissue therapy (83.1%). Less commonly used modalities include rigid taping (66.9%), physical therapeutics (57.8%) and dry needling (37.7%) (Table 2).

100% of the sports chiropractors surveyed treat neuromusculoskeletal conditions outside of the spine, with 37.2% (95% CI 34.3–40.1) of patients presenting to these chiropractors with a non-spinal musculoskeletal primary complaint.

Table 2  
Treatment modality

Treatment modality	N	%
Spinal adjustments	154	100
Peripheral adjustments	153	99.4
Mobilisation	144	93.5
Low force techniques	139	90.3
Soft tissue therapy	150	97.4
Dry needling	58	37.7
Instrument assisted soft tissue (IASTM)	128	83.1
Rigid taping	103	66.9
Kinesiotaping	140	90.9
Physical therapeutics	89	57.8

In addition to their treatments, sports chiropractors also prescribe rehabilitative exercises (on average 76% of all visits (95% CI 72.1–79.9), ergonomic advice 68.5% (95% CI 63.6–72.8%) with nutritional advice less commonly prescribed to patients at 39.8% (95% CI 34.9–44.5).

All of the sports chiropractors surveyed refer to other health practitioners, with 63.6% often doing so. The most commonly referred to health practitioner were orthopaedic surgeons (78.6% having referred to), massage therapist/myotherapist (76.6%), general medical practitioner (71.4%), physiotherapist/physical therapist (62.3%) and podiatrist (50%).

The majority (91.6%) of sports chiropractors co-manage with other health practitioners with 58.4% often doing so. The most common practitioner that sports chiropractors co-manage patients with is physiotherapist/physical therapists (59.7%), massage therapists (54.5%), orthopaedic surgeon (44.8%), general medical practitioner (44.8%), strength and conditioning professional (35.71%) and sports physician (31.2%).

## Discussion

This is the first survey to describe the demographic and practice characteristics of FICS based sports chiropractors. Based on this survey, sports chiropractors are working with elite and professional athletes in many countries and sports and serve as an integral part of the sports medicine team. They are primarily male, between the ages of 31–40 years of age and have been in practice for 5–10 years.

The demographics in this study were predominantly male (78% n = 120) which is similar to other studies of the general chiropractic population (62.4–79.2% male).(10–13)

Sports chiropractic is not a modality. Chiropractors have been described as uni-modal,(14) utilising manipulation only, but the results of this survey suggests the contrary. 90.9% of respondents were multi-modal in the majority of their treatments. Spinal and extremity manipulation are commonly combined with soft tissue therapy (used by 97.4% of chiropractors), mobilisation (93.5%), kinesiotaping (90.9%), low force techniques (90.3%), instrument assisted soft tissue therapy (83.1%), rigid taping (66.9%), physical therapeutics (57.8%) and dry needling (37.7%). A 2009 survey of the general US chiropractic profession by Christensen et al revealed that more than three-quarters of general chiropractic practitioners use passive adjunctive care procedures including ice packs, trigger point therapy, braces, and electrical stimulation.(10) A recent survey by Adams et al describes that nearly half of the surveyed general chiropractors who treat athletes or sportspeople 'often' were more likely to use a multimodal approach to management more than their colleagues that did not treat athletes or sportspeople 'often'.(9) This compares to the 97.4% of sports chiropractors in this study who utilise a multimodal approach to the management of their athletes. Based on the above, some of these views are likely based on inferences drawn from the philosophical boundaries of how general chiropractors may treat as a Primary Spine Care Providers (15, 16) in the past, and not how multimodal sports chiropractors (7–9, 17) currently manage patients.

Rehabilitative exercises are prescribed on 76% of visits, to a sports chiropractor, a figure that is greater than general chiropractors (31%).(16, 18) Despite a thorough search of the literature, there is no comparative figure that we could locate for physiotherapists or sports physiotherapists exercise on current prescription behaviours.

Chiropractors are often labelled "spine only" and there are many reasons ranging from self-promotion by chiropractors to misrepresentations by non-chiropractors.(19–23) A lengthy discussion of this issue has occurred in another commentary.(21) However, this survey reports sports chiropractors commonly treat both spinal and non-spinal neuromusculoskeletal conditions. 100% of sports chiropractors treat non-spinal neuromusculoskeletal conditions (99.4% spinal) and 37.2% of their patients have a primary complaint that is non-spinal musculoskeletal.

This survey also reports on the self-education of sports chiropractors who are sometimes labelled as not conforming to evidence-based practice.(2, 24) However, like medical practitioners, allied health care practitioners and other CAM practitioners, chiropractors perceive the need for evidence-informed practice.(25) Our study and others on sports chiropractors illustrate that need.(1) This study showed that sports chiropractors are well-read in research (on average 2.9 articles per week and 2.5 hours spent), although this survey did not examine the quality or retention of this reading or how they implement this research. This implementation of evidence into practice is not unique to chiropractic and sports chiropractic. It is noteworthy that similar issues have been described in orthodox medical and allied health groups. Some have suggested that a considerable amount of management in sports medicine is not supported by evidence.(26) It is noteworthy that health practitioners have a difficult time deciding between the research-based evidence, patient choice and their own clinical views (25, 27–33) so it should not be surprising that sports chiropractors are also afflicted by this challenge.

The current NFL season saw 41 team chiropractors working with all 32 teams and chiropractic services offered in the Summer Olympic games polyclinic in 2008, 2012 and 2016. As our study revealed, the vast majority of ICSSP chiropractors surveyed have at some stage in their careers treated professional (90.9%) and semi-professional (94.8%) athletes, with 20.1% currently working with a sports team full time. They also refer (63.6% often doing so) and co-manage (58.4% often) with other health professionals.

There are those that hold the views that chiropractors do not integrate well in a mainstream multi-disciplinary team, nor do they interact with other professionals on a regular basis.(24) Whilst this may have been true historically, chiropractors reported co-management of a greater proportion of health conditions with other professionals in 2014 than in 1998; this suggests an increasingly integrated approach to patient care.(10) These historical perceptions are not true of FICS based sports chiropractors based in our study and also others.(2, 34) The need to pursue best practice, evidence-based multimodal care is evident in the sports chiropractors described in this sample as they integrate their management offerings with others in the sports medicine team.(19)

This study attracted a good response rate of 64% likely to be representative of the FICS based sports chiropractors.(35, 36) However, whilst it may be the largest international group FICS is not representative of all sports chiropractic groups and that remains a limitation of the study.

Additionally, the survey was written in English and therefore limited to English speaking FICS chiropractors. However, despite the name FICS, the ICSSP/D qualification is only presented in English and therefore those who have completed it would be expected to be proficient in English.

This study was a preliminary study describing the activities of sports chiropractors. Future research could investigate different geographical, practice and practitioner characteristics, comparing sports chiropractors at different levels of involvement (local, state, national, international as well as describing in detail the treatment outcomes obtained by sports chiropractors.

## Conclusions

There is often a lack of knowledge and misinformation about the background of sports chiropractors. This study refutes a number of commonly held misbeliefs, and describes a workforce that is well educated, treat high-level athletes, utilise a multimodal approach to management, treat a wide variety of non-spinal musculoskeletal conditions, frequently prescribe rehabilitative exercise, and refer to and co-manage with other members of the sports medicine team.

## Declarations

**Ethics approval and consent to participate:** RMIT University, SEH College Human Ethics Advisory Network (ASEHAPP 52-14 AMES)

**Consent for publication:** Not applicable, all data de-identified



**Availability of data and materials:** The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

**Competing interests:** None

**Funding:** None

**Authors' contributions:** LN, HP, RA, PG & BJ were all involved in the design of the study. LN created & distributed survey, CD performed statistical analysis of data, LN, HP, RA, PG & BJ reviewed manuscript.

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