



## RESEARCH REPORT 2018

## INTRODUCTION

The present document reports the list of all publications referring to the 2018 in chronological order. All authors published their research papers, articles, studies, book chapters etc. in collaboration with the Non-Profit FOUNDATION COME COLLABORATION.

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*“I just don’t have the tools” – Italian osteopaths’ attitudes and beliefs about the management of patients with chronic pain: A qualitative study.*

Andrea Formica, Oliver P. Thomson, Jorge E. Esteves.

Journal: International Journal of Osteopathic Medicine 27 (2018) 6-13

#### Abstract

**Objectives:** Chronic pain is a complex and challenging problem for manual therapists, such as osteopaths, especially in identifying and managing the multiplicity of psychosocial factors associated with chronic musculoskeletal pain. This study explored Italian osteopaths' attitudes and beliefs towards chronic pain, particularly their understanding of the biomedical and biopsychosocial (BPS) dimensions of chronic pain, and the role they play in their clinical practice.

**Methods:** A qualitative study was conducted using in-depth semi-structured interviews. A purposive sample of 11 osteopaths practising in Italy was recruited from a poster advert sent to 8 Italian osteopathic schools. Interview data were transcribed verbatim and interpreted using a constructivist approach to grounded theory as a framework for data collection, analysis, and conceptualisation.

**Results:** Three themes were constructed from the data: 1) process of patient evaluation; 2) professional view; 3) developing professional knowledge.

**Conclusions:** Osteopaths displayed a greater orientation towards the biomedical dimensions of chronic pain than dimensions associated with the BPS model. Although the importance of the BPS model has been recognised as part of the osteopathic philosophy of clinical practice and the role of psychosocial factors (PS) are considered important in pain experience, the osteopaths included in this study highlighted a lack of knowledge and skills to assess and address psychosocial risk factors in the management of long term pain sufferers. These findings indicate the need for osteopaths to acquire additional skills and knowledge in professional training programs to develop a more operational holistic view in managing chronic pain sufferers.

*“Profile of osteopathic practice in Spain: results from a standardized data collection study”*. Gerard Alvarez Bustins, Pedro-Victor Lopez Plaza, Sonia Roura Carvajal.

Journal: BMC Complementary and Alternative Medicine (2018) 18:129

## Abstract

**Background:** There is limited research regarding patients’ profiles and consumer attitudes and habits of osteopathy in Spain. The purpose of this study was to profile patients who regularly receive osteopathic care in Spain using an internationally developed standardized data collection tool.

**Method:** During the period between April 2014 and December 2015, a UK-developed standardized data collection tool was distributed to Spanish osteopaths who voluntarily agreed to participate in this cross-sectional study.

**Results:** Thirty-six osteopaths participated in this study and returned a total of 314 completed datasets. Of 314 patients, 61% were women and 39% were men, with a mean age of 40 years (SD 17.02 years, range 0 to 83 years). Forty-four percent were full-time salaried workers, and in 78% of cases, receiving osteopathic treatment was the patient’s own choice. Chronic spinal pain presentations were the most frequent reasons for consultation. Seventy-five percent of patients presented with a coexisting condition, mainly gastrointestinal disorders and headaches. The main treatment approach consisted of mobilization techniques, followed by soft tissue, cranial and high velocity thrust techniques. Improvement or resolution of the complaint was experienced by 93% of patients after a small number of sessions. Adverse events were minor and occurred in 7% of all cases.

**Conclusion:** This is the first study carried out in Spain analyzing the profile of patients who receive osteopathic care. The typical patient who receives osteopathic care in Spain is middle-aged, presents mainly with chronic spinal pain, and voluntarily seeks osteopathic treatment. Osteopathic treatment produces a significant improvement in the majority of cases with a low rate of minor adverse events reported.

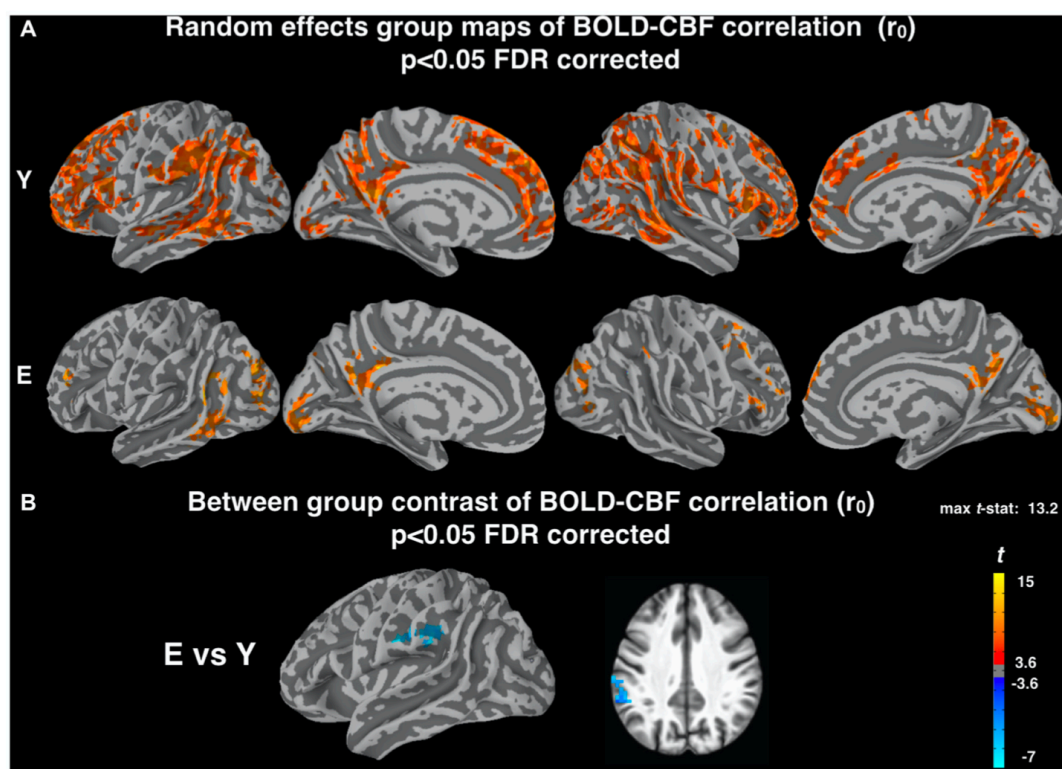
*“Reduced dynamic coupling between spontaneous BOLD-CBF Fluctuations in older adults”. A Dual-Echo pCASL Study.*

Piero Chiacchieretta, Francesco Cerritelli, Giovanna Bubbico, Mauro Gianni Perrucci and Antonio Ferretti.

Journal: Frontiers in aging Neuroscience. Original Research published: 23 April 2018.

## Abstract

Measurement of the dynamic coupling between spontaneous Blood Oxygenation Level Dependent (BOLD) and cerebral blood flow (CBF) fluctuations has been recently proposed as a method to probe resting-state brain physiology. Here we investigated how the dynamic BOLD-CBF coupling during resting-state is affected by aging. Fifteen young subjects and 17 healthy elderlies were studied using a dual-echo pCASL sequence. We found that the dynamic BOLD-CBF coupling was markedly reduced in elderlies, in particular in the left supramarginal gyrus, an area known to be involved in verbal working memory and episodic memory (Fig 1). Moreover, correcting for temporal shift between BOLD and CBF timecourses resulted in an increased correlation of the two signals for both groups, but with a larger increase for elderlies. However, even after temporal shift correction, a significantly decreased correlation was still observed for elderlies in the left supramarginal gyrus, indicating that the age-related dynamic BOLD-CBF uncoupling in this region is more pronounced and can be only partially explained with a simple time-shift between the two signals. Interestingly, these results were observed in a group of elderlies with normal cognitive functions, suggesting that the study of dynamic BOLD-CBF coupling during resting-state is a promising technique, potentially able to provide early biomarkers of functional changes in the aging brain.



**FIGURE 1 | (A)** Random effect group maps showing the dynamic coupling between spontaneous blood oxygenation level dependent (BOLD) and cerebral blood flow (CBF) fluctuations for Young (Y) and Elderly (E) groups when potential time shifts between the two signals were not compensated for ( $r_0$ , see "Materials and Methods" section). **(B)** Between-group contrast comparing the dynamic coupling between spontaneous BOLD and CBF fluctuations for Y and E, using  $r_0$  values. A significant age related decrease of BOLD-CBF coupling is observed in the left supramarginal gyrus (MNI coordinates:  $-59, -34, 33$ ). The statistical maps were thresholded at  $p < 0.05$  (corrected for multiple comparisons using FDR) and superimposed on the partially inflated study specific template.

*“Osteopathic clinical reasoning: An ethnographic study of perceptual diagnostic judgments and metacognition”.*

Cindy McIntyre, Judith Lathlean, Jorge E. Esteves.

Journal: International Journal of Osteopathic Medicine 28 (2018) 30-41.

## Abstract

**Background:** Clinical reasoning has been widely researched in the health sciences; however, in osteopathy it is still in its relative infancy.

**Objective:** To explore the moment by moment clinical reasoning processes of an osteopath whilst with patients, to understand the role of perceptual diagnostic judgments, and metacognitive processes. **Method:** A qualitative interpretive study with a novel narrative method as an organising structure: the moment by moment thought processes of a single osteopath were recorded and transformed into descriptions of the interactions with patients. The descriptive texts were expanded into narratives using autoethnography and reflective practice. Narratives were then analysed using methods originating from grounded theory.

**Results:** Our interpretations indicate that osteopaths establish a multisensory construct during clinical reasoning which enables both analytic and intuitive decision-making strategies. Clinical reasoning was monitored by a variety of metacognitive processes, including intuitive discernments such as feeling that a decision is correct, and the judgment that there is sufficient information to make that decision.

**Conclusions:** This is the first study to explore the subjective moment by moment clinical reasoning and decision-making strategies of an osteopath whilst with patients. It suggests that perceptual diagnostic judgments are multisensory and include mental and visual imagery, and embodied senses. These enable analytic and intuitive diagnostic strategies that are accompanied by persistent metacognitive processes during the consultation, which guide the practitioner's decision strategies.



*“The beliefs and attitudes of UK registered osteopaths towards chronic pain and the management of chronic pain sufferers – A cross-sectional questionnaire based survey”.*

Roy J.D. Macdonald, Paul Vaucher, Jorge E. Esteves.

Journal: International Journal of Osteopathic Medicine 30 (2018) 3-11.

## Abstract

**Objectives:** This study investigated the beliefs and attitudes of UK registered osteopaths towards chronic pain and the management of chronic pain sufferers.

**Methods:** A cross-sectional questionnaire based survey of UK registered osteopaths was performed to test the hypothesis that osteopaths have a more biopsychosocial approach to treating and managing chronic pain patients than other healthcare professionals. Sociodemographic determinants of the participants were explored and the original HC-PAIRS and the PABS-PT used as measurement tools. They assess practitioners' attitudes and beliefs towards perceived harmfulness of physical activities for patients with cLBP and participants' knowledge of pain. International meta-analyses were performed with both measurement tools to allow comparison with other healthcare professionals.

**Results:** UK registered osteopaths ( $n = 216$ ) had mean PABS-PT subscale scores of  $31.37 \pm 6.26$  [CI95% 30.53–32.21] (biomedical) and  $32.72 \pm 4.29$  [CI95% 32.14–33.29] (biopsychosocial). The mean HC-PAIRS total score was  $45.45 \pm 10.05$  [CI95% 44.11–46.8]. These indicate a wide spread of beliefs and knowledge towards chronic pain with a tendency to agree that physical activity is not necessarily harmful for patients with cLBP. Post-graduate education had a significant positive effect on questionnaire results. Meta-analyses revealed that UK registered osteopaths have significantly better HC-PAIRS scores than most physiotherapy students, nurses and pharmacists, and had similar PABS-PT scores to most other healthcare professionals.

**Conclusions:** The hypothesis of UK registered osteopaths having a more biopsychosocial approach to treating and managing chronic pain patients in comparison to other healthcare providers has been rejected. This seems in contrast to the typically claimed unique concepts of osteopathy. Nevertheless, this study supports their ability to engage with psychosocial factors of the patients' pain experience, but shows that it can be improved. This paper suggests that training is needed to increase osteopaths' expertise in knowledge of chronic pain, and their attitudes towards the management of chronic pain sufferers.

*“Attitudes, skills and use of evidenced-based practice among UK osteopaths: a national cross-sectional survey”.*

Tobias Sundberg, Mathiew J. Leach, Oliver P. Thomson, Philip Austin, Gary Fryer and Jon Adams.

Journal: BMC Musculoskeletal Disorders (2018) 19:439

## Abstract

**Background:** Evidence-based practice (EBP) is a clinical decision-making framework that supports quality improvement in healthcare. While osteopaths are key providers of musculoskeletal healthcare, the extent to which osteopaths engage in EBP is unclear. Thus, the aim of this cross-sectional study was to investigate UK osteopaths' attitudes, skills and use of EBP, and perceived barriers and facilitators of EBP uptake.

**Methods:** UK-registered osteopaths were invited to complete the Evidence-Based Practice Attitude and Utilisation Survey (EBASE) online.

**Results:** Of the 5200 registered osteopaths in the UK, 9.9% (517/5200) responded to the invitation, and 7.2% (375/ 5200) completed the EBASE (< 20% incomplete answers). The demographic characteristics of the survey sample were largely similar to those of the UK osteopathy workforce. The osteopaths reported overall positive attitudes towards EBP, with most agreeing that EBP improves the quality of patient care (69.3%) and is necessary for osteopathy practice (76.5%). The majority reported moderate-level skills in EBP, and most (80.8%) were interested in improving these skills. Participating osteopaths typically engaged in EBP activities 1–5 times over the last month. Barriers to EBP uptake included a lack of time and clinical evidence in osteopathy. Main facilitators of EBP included having access to online databases, internet at work, full-text articles, and EBP education materials.

**Conclusions:** UK osteopaths were generally supportive of evidence-based practice, had moderate-level skills in EBP and engaged in EBP activities infrequently. The development of effective interventions that improve osteopaths' skills and the incorporation of EBP into clinical practice should be the focus of future research.

*“Immediate effect of T2, T5, T11 thoracic spine manipulation of asymptomatic patient on autonomic nervous system response: Single-blind, parallel-arm controlled-group experiment”.*

Giovanni Minarini, Michael Ford, Jorge E. Esteves.

Journal: International Journal of Osteopathic Medicine 30 (2018) 12-17.

## Abstract

**Purpose:** Investigating the immediate effect of thoracic spinal manipulation on autonomic nervous system targeting three segments arbitrarily chosen, T2/T5/T11, compared to a sham-treatment randomised controlled group.

**Methods:** 73 participants completed the study protocol. Paired-t test were used to compare within-group and ANOVA repeated measures for between-groups results. Subjects were randomised into a single-blind controlled trial involving two study groups: intervention group and sham treatment group. Outcome measure was the rMSSD, electronically recorded through R-R intervals, continuously registered over a period of 60 s before and 60 s after the manipulation/sham.

**Results:** Within-group and between-group changes suggest a significant increase in rMSSD ( $p < 0.05$ ) in intervention group compared to sham treatment, immediately after the postero-anterior thoracic HVLAT.

**Conclusion:** The result of this study suggests that thoracic OMT could affect ANS balance with a shift towards parasympathetic increase activity. Due to population sample, this study shouldn't be used for clinical application, but as a baseline for future research on the argument.

*“An overview of osteopathy graduates’ perceived preparedness at transition from educational environment to clinic environment one year after graduation: a cross sectional study”.*

F. Luciani, G. Consorti, P.L.S. van Dun, O. Merdy, C. Lunghi, M. Petracca, J.E. Esteves and F. Cerritelli.  
Journal: BMC Medical Education (2018) 18:319

## Abstract

**Background:** This study investigated perceived preparedness to practice, one year after graduation across osteopathic education institutions (OEs) and explored possible differences between countries where osteopathy is regulated (Reg) and countries where it is not (Unreg).

**Methods:** Two hundred forty-five graduates from 7 OEs in 4 European countries, already assessed in a previous study, were contacted one year after their graduation to complete the survey. Survey tools included a questionnaire to assess perceived preparedness to practice: Association of American Medical Colleges (AAMC) questionnaire, and a questionnaire to collect socio-demographic information and practice characteristics.

**Results:** One hundred sixty-eight graduates (68.6%) completed the survey. The AAMC mean score one year after the graduation (23.19; confidence interval 22.81–23.58) was significantly higher than in the previous study (17.58; 16.90–18.26) ( $p < 0.001$ ). A difference was also found between Reg (23.49; 23.03–23.95) and Unreg (22.34; 21.74–22.94) ( $p = 0.004$ ). Osteopaths with a previous healthcare degree scored significantly higher on AAMC score (25.53; 24.88–26.19) than osteopaths without a previous healthcare degree (22.33; 21.97–22.69) ( $p < 0.001$ ). Regulation and a previous degree were the only significant independent variables in the most predictive multivariate linear model. The model had an  $r^2 = 0.33$ .

**Conclusions:** Graduates from OEs where osteopathy is regulated felt significantly better prepared to practice than Unreg. Systematic information searches about graduates’ perception of preparedness to practice, may enable OEs to strengthen their existing curricula to ensure their graduates are effectively prepared to practice.

# Die Rolle sanfter Berührungen in der perinatalen Osteopathie

*Francis McGlone, Francesco Cerritelli, Susannah Walker, Jorge Esteves*

## Zusammenfassung

Die osteopathische Medizin ist ein manuelles Diagnose- und Therapiesystem, bei dem der Tastsinn eine entscheidende Rolle spielt. Zwar mehren sich die Hinweise, dass Osteopathie bei etlichen klinischen Zuständen wirksam ist, die biologischen Mechanismen der therapeutischen Wirkungen sind jedoch nach wie vor weitgehend unbekannt. Mit besonderem Fokus auf die perinatale Versorgung werden in diesem Artikel die möglichen Mechanismen untersucht, die den positiven physiologischen und psychologischen Effekten einer Stimulation der Hautsinne auf das Wachstum und die Entwicklung zugrunde liegen. Wir vermuten, dass eine Klasse niedrigschwelliger, mechanosensitiver C-Fasern, C-taktile Afferenzen genannt, die optimal auf sanfte, langsam streichende Berührung reagieren, wesentlich zur Wirksamkeit manueller Therapien beitragen. Um gezieltere therapeutische Interventionen entwickeln zu können, ist es notwendig zu verstehen, welche Rolle die Qualität und Stärke der Berührung bei manuellen therapeutischen Interventionen spielen. Auch die aktuellen neurowissenschaftlichen Erkenntnisse sind zu berücksichtigen.

## Schlüsselwörter

Berührung, Osteopathie, C-taktile Afferenzen, Gesundheit, Pädiatrie, Entwicklung

## Abstract

Osteopathic medicine is a system of manual diagnosis and treatment. While there is growing evidence that osteopathy is effective in a range of clinical conditions, the underlying biological basis of its therapeutic effects remain largely unknown. Given that the sense of touch plays a critical role in osteopathy, in this perspective article, with a particular focus on perinatal care, we explore the potential mechanisms by which stimulation of the skin senses can exert beneficial physiological and psychological effects, aiding growth and development. We propose that a class of low threshold mechanosensitive c-fibre, named c-tactile afferents, which respond optimally to gentle, slow moving touch are likely to play a direct and significant role in the efficacy of manual therapies. A greater understanding of the impact the type and quality of touch plays in therapeutic tactile interventions and in particular the neuroscience underpinning these effects will aid the development of more targeted, population specific interventions.

## Keywords

Touch, osteopathy, C-tactile afferents, health, paediatrics, development

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