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# Collaborative practice between osteopaths and general practitioners in France

A cross-sectional study

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## Abstract

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<p>Collaborative practice refers to the coordinated and active engagement of healthcare professionals working towards a shared objective: the health and wellbeing of the patient. Such collaboration can take various forms and involve different stakeholders. In primary care, the general practitioner is the first point of contact who oversee the coordination of patient care pathways. Collaboration between osteopaths and general practitioners can include the exchange of information concerning shared patients to ensure optimal care.</p> <p>This study aimed to describe collaboration between osteopaths and general practitioners in France focusing on the number of patients referred or recommended, the means of communication, and the factors associated with the quality of this collaboration. A cross-sectional study was conducted to describe the situation in France from osteopaths' point of view.</p> <p>The survey, created based on literature, was distributed to osteopaths through different organisations from 1.11.2024 to 28.02.2025. The 213 osteopath respondents reported that 6,67% of their patients were referred to a GP and 4,90% were recommended by a GP to them. Although the quality collaboration was reported as 'good', the quality communication was rated as 'average' and communication most frequently occurred indirectly, via the patient, which raises concerns regarding message reliability and continuity of care. Further research should identify areas where effective collaborative networks have already been established.</p>	
Keywords	Interprofessional collaboration, communication, osteopaths, general practitioners

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## 1 Introduction

Osteopathy, classified as Complementary and Alternative Medicine (CAM) by the World Health Organization (WHO), is a discipline concerned with health. It uses manual contact to diagnose and treat patients. It integrates the links between body, mind and spirit, health and disease. As a holistic practice, osteopathy integrates medical and scientific knowledge with osteopathic principles to optimise, restore or maintain the patient's structures, functions, and well-being. (Bohlen et al., 2021; L'Hermite, 2023; World Health Organization, 2010a).

There are some differences in the recognition and regulation of osteopath status in Europe. The profession of osteopath is recognised and regulated in France, United Kingdom, Switzerland, Portugal, Finland, Denmark; it is only recognised in Belgium, Germany and Norway; and neither recognised nor regulated in Spain, Netherland and Sweden. (Osteopathic International Alliance, 2020). Nonetheless, these differences seem to have little influence on the inclusion of osteopaths into the health care pathway, as patients are mainly self-referred (Ellwood and Carnes, 2021).

The French healthcare system was originally Bismarckian, likewise in Germany and Netherlands. It has always been financed by contributions from the independents, employees and other taxes, originally redistributed to workers. The French National Social Security system, created after World War 2, reimburses healthcare service. Over the last forty years, the model has evolved to be more universal, like the Beveridge model (historically UK, Spain, Sweden, Denmark and Norway) that includes all the population. The French healthcare system is now organised as a mix of the public and private sectors, with a care pathway coordinated by the general practitioners. (Bourque, 2007, Law 2004-810 about French public insurance).

Osteopathy is a new and popular occupation in France that still needs to get more included in the healthcare system (Wagner et al., 2023). Including osteopathy in the French healthcare system as effectively as possible could be achieved through collaborating with other health professionals. General practitioners (GPs) who work in primary care are a sensible choice because they are close to the patients who visit them and have the authority to refer to specialists. To improve the interdisciplinary collaboration<sup>1</sup>

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<sup>1</sup> the word 'cooperation' also appears in the literature

between GPs and osteopaths, we need to measure and understand their current relationship. This study aims to describe the existing collaborative practices between osteopaths and general practitioners in France.

## **2 Theoretical background**

### **2.1 Osteopaths in France**

#### **2.1.1 Legal base**

In France, the discipline of osteopathy is legally recognized under Article 75 of Law 2002-303 (March 4, 2002 regarding to patients' rights and the quality of the health system). This recognition is granted to holders of a diploma from an osteopathic educational institution (OEI) approved by the Ministry of Health, ensuring the quality and standards of care for patients. The definition of osteopathy highlights tissue manipulation in the context of functional disorders in patients. The objective is to maintain or improve the health status. (Decree n°2014-1505 of December 12, 2014 relating to training). The acts and conditions of practice are also precisely defined in the decree n°2007-435 (March 25, 2007). Osteopathic educational institutions awarding diplomas are subject to a training reference framework (Decree n°2014-1505) and an annual number of students decided by the Ministry of Health. Despite a clear legal framework, the osteopath's position in the healthcare system is unclear. The osteopathy profession is not listed in the 'Code de la Santé Publique' (Public Health Code), unlike other health professions included in Book IV and this omission contributes to ongoing confusion regarding osteopathy's official status and role within the French healthcare system (L'Hermite, 2023).

However, osteopaths, as health professionals, have the right to exchange health information about their patients and must inform them of this exchange, the nature of the information and the receiver (Decree n° 2016-994 of July 20, 2016 relating to the conditions of exchange and sharing of information between health professionals and other professionals in the social and medico-social fields and to access to personal health information).

### 2.1.2 Demographics of French osteopaths

The demographics of osteopaths in France are difficult to ascertain. In 2022, the national ADELI register ('Automatisation DE Llistes' a register of health professions regulated by the Public Health Code) listed 36 861 osteopaths, 23 402 of whom were exclusive (with no other health profession). The entry in the ADELI register is required for osteopaths to start practising once they have obtained their diplomas. However, these figures could include osteopaths who are not practising or have stopped practising because, apart from this legal obligation, there is no control over the veracity and up-to-dateness of the data. In its 2021 report, the 'Inspection Générale des Affaires Sociales' (IGAS, Interministerial general inspection of the social sector in France, carries out control, audit, expertise and evaluation missions) counted 15 043 osteopaths contributing to the compulsory pension scheme (Gady-Cherrier and Zantman, 2022). These represent osteopaths truly working with patients. A migration from the ADELI register to another register RPPS ('Répertoire Partagé des Professionnels intervenants dans le système de Santé') is currently underway, which could improve the reliability of the figures (Agence du Numérique en Santé, 2024).

France is the country with the most osteopaths in the world, whether we count them as 15 043 or 36 861 practitioners (Osteopathic International Alliance, 2020). The profession is popular among patients in France, with 53% of the French population having consulted an osteopath in the last five years. 86% of the population believe they can trust osteopathy to relieve patients safely. (Odoxa for UPO, 2024).

### 2.1.3 Characteristics of patients consulting osteopaths

In France, most patients are adults. They are mostly 18 to 40 years old followed by 40 to 65 years old, suffering from acute or chronic complaints. (Wagner et al., 2023) As in other countries, the main reason for consulting with an osteopath is musculoskeletal pain, most often spine and pelvis related, non-specific or with radiation (Dubois et al., 2012; Ellwood and Carnes, 2021; Morin and Aubin, 2014; Wagner et al., 2023). Osteopaths also see children and infants (Marangelli, Tavernier and L'Hermite, 2024).

Consultations usually last between 45 and 60 minutes (Wagner et al., 2023), including reception, patient information, seeking consent, gathering information, drawing up a treatment plan, carrying it out and managing information (Appendix I of decree n°2014-1505; Wagner et al., 2023). During the consultation, most patients expect manual man-

agement (as opposed to non-manual therapy, which may include explanation, diagnosis, management plan, self-management, listening and empathy) (Tripodi et al., 2021). The "Haute Autorité de Santé" (HAS, French national authority for health) currently does not write recommendations for good practice in adults<sup>2</sup> even though they are enshrined in law. (decree n°2007-435). The median consultation cost was €51-60 in 2022 (Wagner et al., 2023). Consultations are not covered by the 'Sécurité sociale' (National social security system), but may be by certain mutual insurance companies or private insurers.

## 2.2 Primary care in French health system

### 2.2.1 Primary care

The WHO defines primary care as individuals' first contact with the national health system (World Health Organization, 1978, Alma-Ata Declaration on Primary Health Care). The definition is based on 4 components: first contact, continuity of care, coordination and comprehensive care. (Cartier et al., 2012; Starfield, 1994). In France, it refocuses on access to quality healthcare for all. (Law n°2009-879 of July 21, 2009 on hospital patients, health and territories). There is a structured primary care organisation which includes GPs (Cartier et al., 2012; Law n°2009-879; Windak, Rochfort and Jacquet, 2023) and other independent professionals. The key purpose is to guarantee equal territorial access to care and coordination among professionals.

### 2.2.2 Family physician / general practitioner

The missions of GPs in France are defined as follows:

Firstly, the prevention, screening, diagnosis, treatment and monitoring of diseases, and health education. Next, the law includes the components of primary care, to lead and to coordinate care to patients suffering from acute or chronic conditions, and also public health and student training missions. A wide variety of patients visits GPs, who organise healthcare with specialist physicians, clinical examinations and prescriptions for paramedical staff and drugs. (Law n°2009-879 article 36).

In 2021, there were 94 538 GPs (Anguis et al., 2021), the figure is declining over the years and there are regional disparities of distribution. Two-thirds of self-employed GPs

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<sup>2</sup> except in the case of endometriosis: osteopathy is mentioned as a non-pharmacological analgesic treatment, HAS December 2017

work a 50-hour week. There are also salaried doctors working in health companies. In these cases, the working week is 35 hours (employment law). Demographic trends (an increase in the population and a decrease in the number of physicians) have led to increase the number of medical students in 2020 (Anguis et al., 2021; Moyal and Bergeron, 2019). The demographic increase of all physicians could be gradual over the next few years. Although, GPs' working conditions do not attract students to this specialty.

The health branch of the Social Security system covers healthcare costs and guarantees access to care. The cost of a consultation with a GP is set at the national level, and the out-of-pocket expenses for the patient vary from around €10 to full reimbursement in the case of a recognised long-term illness or a precarious situation. Some GPs may apply an extra charge (sector 2 or without agreement). In all cases, the remaining cost to the patient may be covered by mutual or private insurance if the patient has one (Article R160-5 of Social Security system code).

In France, the average consultation lasts 16 minutes (Breuil-Genier and Goffette, 2006), with variations depending on the patient's age and multiple pathologies. Many patients followed by GPs have functional problems or physical symptoms with no identified organic cause. After evaluating the red flags and referring them to other professionals, the evolution of functional problems appears to be positive thanks to a good therapeutic relationship. (Byrne et al., 2022; Ouafik et al., 2023; Roenneberg et al., 2019).

## 2.3 Collaboration in health care

### 2.3.1 Definition and interest

Collaborative practice refers to the coordinated and active engagement of healthcare professionals working towards a shared objective: the health and wellbeing of the patient. It is a dynamic process (D'Amour et al. 2005). Collaboration in healthcare helps meet patients' needs (Mickan, Hoffman and Nasmith, 2010 for WHO). It implies a group of healthcare professionals acting to improve a person's health according to their complementary specialties. (World Health Organization, 2010b). Collaboration is particularly important for populations with chronic illnesses, mental health problems, and disadvantaged social backgrounds (Mickan et al., 2010).

In healthcare teams, particularly in hospitals, collaboration takes the form of team meetings to discuss objectives and the healthcare plan. On an individual level, each member of the team must have a clear vision of their responsibilities and role and those of the other members of the team (Mickan et al., 2010; Morin, 2017). The team must also be actively constructed, which can foster respect and trust between team members (D'Amour et al. 2005). Establishing protocols often helps teams. In France, the HAS's good practice recommendations could fulfil this role of establishing protocols to meet patients' needs (decree n°2007-435). Nowadays, there are no official guidelines involving osteopaths in the management of the adult population (except in the case of endometriosis, HAS December 2017)

### 2.3.2 Existing collaboration between osteopaths and GPs

Because of their legal status and the French healthcare system, osteopaths and GPs do not usually share the same workplace. Among the osteopaths declaring that they work in a multidisciplinary team (44.76%), only 10% of them do work with GPs (Wagner et al., 2023). When they do not work in the same place, the collaboration may take the form of exchanges about shared patients. The transmission of the information required for multi-professional healthcare is one of the skills that students must acquire during initial training in OEI (Appendix I of Decree n°2014-1505 regarding training). These exchanges may consist of referring patients from an osteopath to a GP. 60% of osteopaths state that they often or very often refer patients to a GP. The reasons may be that the patient is no longer within their field of competence (legal obligation to refer to a physician when disorders worsen or fall outside their field of competence, article 2 of Decree no. 2007-435) or signs of pathology or deficit. (Wagner et al., 2023). Osteopaths also receive patients referred by their GP. 40% of osteopaths stated that they very often or often receive patients referred by their GP. GPs, along with physiotherapists, chiropodists, and midwives, are the professionals from whom osteopaths most often receive patients. However, most patients seen in the practice have been there before or have been referred on their own (Wagner et al., 2023).

In a study carried out in Germany, the most common reasons for referring a patient from a GP to an osteopath were back pain, pain linked to the spine and musculoskeletal problems. For GPs, the expectations of benefits are particularly middle-aged patients with chronic pathologies (Schmid et al., 2021). Patients suffering from chronic pathologies are one of the categories for whom collaboration is beneficial (Mickan et al., 2010).

### 2.3.3 Osteopath's and GP's means of collaboration

Communicating (properly) is essential when a collaboration is taking place between GPs and complementary and alternative medicine (CAM) practitioners. (Mior, 2010; Morin, 2017; Penney et al., 2015) The reasons for communication may be the context of referral or the exchange of information about a complex patient (Mior, 2010; Morin, 2017). The means of communication may be formal (written on paper or electronically) or less formal (by telephone, through the patient) (Mior, 2010). In alternative medicine, the patient often acts as an intermediary between professionals, which raises the question of misinterpretation (Penney et al., 2015). Written communication is the most reliable way of transmitting information. This raises the question of how to guarantee patient data protection in electronic transmissions. In France, the evolution of the ADELI register of osteopaths towards the RPPS might open up the possibility of secure email messaging for exchanging patient data between professionals registered with the RPPS. When treating infants and children, osteopaths can use the child health record as a means of communication (L'Hermite, Tavernier and Marangelli, 2024).

In its 2021 report, the IGAS recommended that IOE include courses on inter-professional collaboration to support a coordinated patient healthcare. The IGAS has also proposed to amend the regulations governing osteopaths in the CSP to allow better control of practices and demographics, and could allow to include greater the osteopaths into care. (Gady-Cherrier and Zantman, 2022, recommendation n°24). To date, there is no legal translation applicable to these proposals.

The IGAS also points out the need to improve knowledge of the practice of osteopathy in France in order to improve its legal recognition and its control. The practice of osteopathy includes collaboration with other professionals. There is a lack of data on collaborative practices between osteopaths and GPs in France.

### **3 Purpose, aim, objectives**

This research aims to describe existing collaborative practices between osteopaths and general practitioners in France. This research focuses on osteopathic collaboration with GPs.

The research questions were:

- What is the number of patients referred to a GP and those recommended by a GP to osteopaths?
- What means of communication are used during these exchanges of information?
- What factors are associated with the quality of collaboration and communication?

### **4 Material & methods**

#### **4.1 Design**

We used a non-experimental observational study to describe the occurrence of collaboration and its connections to other factors. Among analytical studies, cross-sectional studies enable us to analyse the situation in France on this subject at a given time. (Mujis, 2004: 34; Aromataris et al. 2024: 34)

As there is no register for contacting all osteopaths, we had to find other ways for contacting them. We had, therefore, chosen a certain number of organisations and establishments where osteopaths are employees, participants or visitors. We asked these establishments to send our questionnaire by e-mail, newsletter to osteopaths or link on the website. Research permits had to be signed by direction or president of each organisation. This sampling method is called convenience sampling (Mujis, 2004: 40). We expected to receive between 500 and 1000 responses to the questionnaire. This represents 3 to 6% of the population, if we use the figures from IGAS for osteopaths having paid contributions in 2021, which seems to correspond to active workers. However, we did not set a ceiling on the number of responses we received.

The list of organisations we had contact was as follows:

- Osteopathic educational institution (OEI): these are osteopathic school that train post-baccalaureate students to become osteopaths within 5 years. Some of the teaching staff are osteopaths with a clinical practice in addition to their teaching activity. (Institut Toulousain d'Ostéopathie, Collège Ostéopathique Strasbourg, Collège Ostéopathique Provence, Collège Ostéopathique Bordeaux, Centre International D'Ostéopathie, Ecole d'Ostéopathie Paris, Centre Européen d'Enseignement Supérieur d'Ostéopathie and Institut d'Ostéopathie Rennes-Bretagne.)
- Continuing Professional Development (CPD): in France, osteopaths are required to undergo further training after they have obtained their diploma. Some training organisations are offering both online and face-to-face training for osteopaths. (Kookie learning, Centre de Formation Professionnel Continue en Osteopathie and Institut Français de Formation Continue en Ostéopathie.)
- Association, professional union or others organisations: aim to promote a vision of osteopathy, defend the interests of the profession and French osteopaths or offer services targeted for osteopaths. Their members or clients are osteopaths which aligned with our target audience. (Registre des Ostéopathes de France, Syndicat Français des Osteopathes, Ostéopathes de France, Ostéopathe.Pro)

The inclusion criteria for the survey were:

-Work as an osteopath with patients in France, graduated in France according to the French regulation.

-Work as an independent (owner/collaborator/substitute) or they are employed at part time or full time.

-Read and accept consent participant and participant information sheet (Appendix 3-5)

The survey was sent with Elomake software that has a partnership with the UAS and guarantees data storage in the European Union in compliance with the law.

## 4.2 Description of the survey and variables

The survey was created based on Chantal Morin's thesis (Morin, 2017) with her approval (March 5, 2024 by email). It was adapted for France's general population and its socio-professional context. We included demographic data to compare our sample with the characteristics of French osteopaths in light of recent studies and a section on osteopaths' collaboration with general practitioners (All the details items in Appendix 1). A pilot test was conducted in October 2024. The survey was sent to three osteopaths to assess the response time and clarity of the questions (Dawson, 2002:95). We corrected a few errors and adjusted the layout of the survey in Elomake. The last version of the survey is in Appendix 2 (English version and French version distributed to target population).

## 4.3 Statistical analysis

To answer the research questions, the variables were classified as dependent and independent as shown in Table 1. The interpretation and analysis of the items were presented in Appendix 1.

Table 1. Description of the study variables.

DEPENDANT VARIABLE	INDEPENDANT VARIABLES
Number of patients recommended by a GP (% of all patient received in a month)	Reason of consultation Limiting and encouraging factors collaboration's
Number of patients referred to a GP (% of all patient received in a month)	Clinicals element Limiting and encouraging factors collaboration's
Quality of collaboration	Workplace, business relationship with GP Quality of communication Other qualification (in healthcare)
Quality of communication	Mean of communication Continuing Professional development Other qualification (in healthcare)

COVARIATE
Demographic items

The study data were imported and processed in the software SPSS.

Demographic data were compared with national data of osteopaths. We looked for trends regarding categories (working condition, area of exercise, etc.). Significant results were presented with their median. We calculated the percentage of patients received from a GP and those sent to a GP from the total number of patients received per month for each respondent. The number of patients and percentage of patients have been grouped into quartiles. We looked for correlations with Spearman Rho and association with crosstabulation and Chi-Square. We also looked for potential correlations with Spearman Rho for ordinal and continuous variables and association with crosstabulation and Chi-Square for nominal variables. Statistical significance was determined for a p-value or asymptotic significance less than 0,05. When there was a statistical significance, we calculated a correlation coefficient or a strength of association. The open-ended questions were grouped into themes and occurrences were counted.

#### 4.4 Validity and reliability

Validity is an essential element of a quantitative study (Dawson, 2002:110; Mujis 2004:65). The literature-based survey (as shown in Table 1) and the pilot testing followed by discussion support internal validity (Mujis, 2004:70). About external validity, demographic questions of our survey were compared to the characteristics of the French osteopaths to assess the representativeness of our sample and consider generalising it to a wider population. (Mujis, 2004)

Regarding reliability (Mujis 2004:71), the statistical tests used and the conditions of use have been described in detail in the paragraph 4.3. The complete survey was available in the Appendix 1 and 2 to reproduce this study later or in another country.

#### 4.5 Ethics and data privacy notice

Participation to this study was voluntary and anonymous (social security number, fiscal number or personal identifier were never asked). Demographic data was requested to analyse the sample's representativeness and search for correlation factors. There was no way or mean to recognise the osteopaths who responded, or the structures where they were working, or their patients. Data were analysed by categories and subcategories and not by individuals. All the data management details have been created and filed with Tuuli (Appendix 6).

Consent was informed through information about the study available on the first page of the survey on Elomake (participation information sheet, English version in appendix

4 and French version in appendix 5). French version of consent participant (Appendix 3) was signed by ticking a box at the start of the survey on Elomake. This consent could be withdrawn by writing a mail until the data was processed. Participants could also request more information by mail (participation information sheet, Appendix 4 and 5). Metropolia University had an agreement with Elomake guaranteeing the security of the data and its location on European territory and therefore subject to European data protection laws.

Grammarly and DeepL were used to improve academic English. Other software and applications used were SPSS for statistics, Microsoft Word and Excel for redaction and table.

## **5 Results**

The survey was sent to osteopaths through different organisations from 1 November 2024 to 28 February 2025.

### **5.1 Sample characteristics**

213 osteopaths responded to the survey, 106 (49.8%) of whom were men, 104 (48.8%) were women and 3 (1.4%) respondents identified to a different gender.

All the respondents came from all over Metropolitan areas of France (no respondent based in overseas regions). The most represented region was Occitanie with 50 respondents (23.5%), knowing that the author who carried out this study worked in this region. Then, 37 respondents (17.4%) came from Auvergne Rhone Alpes and 32 (15%) came from Ile de France, both of which were attractive regions with cities like Paris and Lyon. The 44.1% remaining respondents were spread across the other provinces of Metropolitan France.

Respondents had been graduated between 1984 and 2024, with a median in 2013 and three quartiles between 2008 and 2024. More than a half did not teach (58.2%), the others taught in Osteopathic Educational Institutional (27.2%), Continuing Professional Development (2.8%), other places (2.8%) and for 9.4% several of these places: OEI and CPD or OEI and other places.

All of them were self-employed, with a majority of owners having their own practice (N=189/88.7%) and a lower proportion of collaborators (N=20/9.4%) working in osteopath-owned practices. They usually worked in small towns (41.3%), big cities (33.8%) and countryside (24.9%). Almost three quarters of the respondents (73.7%) did not share their workplace with a GP, although roughly two thirds of them (66.2%) reported a professional relationship with a GP. There was no significant association between these two groups: sharing a workplace and having a professional relationship with a GP (Chi-Square Tests Asymptotic significance>0,05).

61.5% of the respondents had no other qualifications than their osteopathic diploma. Other qualifications possessed were: paramedical qualifications (11.7%) (for physiotherapists, nurses and chiropodists, etc.); University Degrees 10.8% (anatomy, perinatality, Teacher Training Course, odontology, etc.), Bachelor degrees 2.8% (sports, psychology), Master degrees 6.1% (educational science, human sciences, neurosciences, osteopathy, etc.) and one (0.5%) Doctoral degree (PhD). Among all the respondents, 6.6% had another qualification unrelated to health and sport. 34 participants had received training in collaboration or multidisciplinary.

## 5.2 Patients referred to a GP by an osteopath and those recommended to an osteopath by a GP

### 5.2.1 Patients attended by an osteopath

Over the data collection, osteopaths' respondents saw a total of 21 241 patients, 1 417 (6,67%) of whom were referred to a GP and 1 040 (4,90%) of whom were recommended by a GP.

Respondents received between 0 and 400 patients during the 30 days of data collection phase, with a median of 90 patients over 30 days (one quartile of 60 patients and three quartiles of 120 patients).

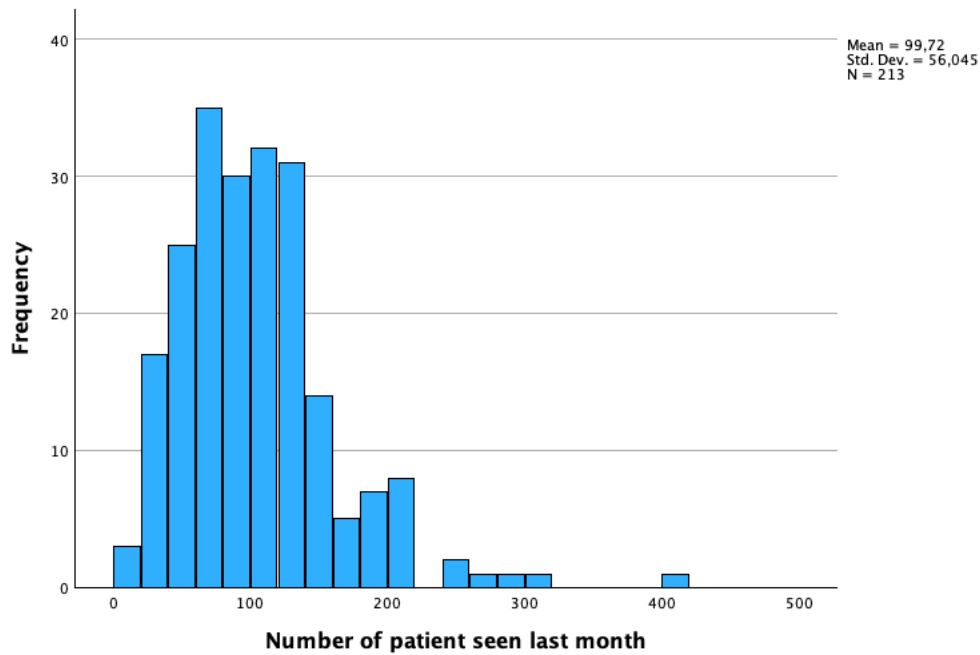


Figure 1. Number of patients received during the 30 days of data collection .

The distribution was not normally distributed (Gaussian distribution) for all the items (taking into account gender, year of degree, number of patients attended, etc.).

### 5.2.2 Patients referred to a GP

Some patients were referred to a GP before or after the osteopathic session was provided. To be able to compare figures, we have expressed this number of patients referred to a GP as a percentage of the patients seen in one month. Osteopaths referred between 0 and 79.77% of their patients to a GP, with a median of 5% and the three quartiles at 10% of the patients they received.

The statistically significant factors leading to refer a patient were:

- The correlation was low (0.339) for the number of patients received by osteopaths and the percentage of patient they referred to a GP (Spearman Rho  $p$ -value<0.001). The median of percentage of patients referred to GPs decreased from 8,3% to 3,3% per quartile of the number of patients received by osteopaths. The less osteopaths received patients, the more they referred patients to GPs.

- The association was weak (Cramer's  $V = 0,292$ ) for graduation year and the percentage of patient referred to a GP (Chi-Square Test Asymptotic significance  $< 0.001$ ). The percentage of referred patients was grouped into categories according to quartiles: 0 to 2.5%, 2.6 to 5.3%, 5.4 to 9.99% and more than 10%. Recent graduates (osteopaths who graduated less than five years ago) referred a median of 8% patients of all the patients seen in a month to a GP, while the median was 4.17% for older graduates. The median of graduation year varied according to the percentage of patients referred to GPs: 2011 for the quartile referring the least, 2017 for the quartile referring the most.

There was also a low inverse correlation ( $-0.466$ ) between the year of graduation and the number of patients attended by osteopaths. (Spearman Rho p-value  $< 0.001$ ). The median of graduation year varied according to the percentage of patients attended: 2020 for the quartile receiving the least, 2011 for the half receiving the most.

There was a low association (Cramer's  $V = 0,289$ ) between the total number of patients attended by osteopaths and the declaration of a business relationship with a GP (Chi-Square Test Asymptotic significance  $< 0,001$ . The number of patients was grouped into categories according to quartiles: 0 to 60; 61 to 90; 91 to 120, more than 121 patients in a month)

No other significant correlation or association were found including sharing workplace with GPs with Chi-Square and Spearman Rho (Asymptotic significance and p-value  $> 0,05$ )

The reasons why osteopaths referred a patient to a GP were 'often' a wish for multidisciplinary or for a diagnosis and 'sometimes' a patient falling outside their sphere of competence. The 'other reasons' were not answered (missing values=146) or mentioned as 'never'.

Table 2. Reasons why osteopaths referred patient to a GP. Median in **bold**

		Outside the field of competence	Multidisciplinary	Looking for a diagnosis	Other reason
Never	% (N)	6,1 (13)	2,3 (5)	0,9 (2)	<b>16,4 (35)</b>
Rarely	% (N)	20,7 (44)	4,2 (9)	1,9 (4)	5,6 (12)
Sometimes	% (N)	<b>22,1 (47)</b>	14,6 (31)	14,1 (30)	5,6 (12)
Often	% (N)	30 (64)	<b>57,3 (122)</b>	<b>61 (130)</b>	3,3 (7)
Always	% (N)	13,1 (28)	14,6 (31)	16,9 (36)	0,5 (1)
Missing	% (N)	8 (17)	7 (15)	5,2 (11)	68,5 (146)
Total	% (N)	100 (213)	100 (213)	100 (213)	100 (213)

For the categories « outside the field of competence », the elements specified (n=18) were the presence of pathology, or clinical signs suggestive of pathology. The clinical signs (n=176 valid responses, several signs per response) leading to refer a patient were, in order of occurrence in the responses: neurological signs (peripheral or central), cardiovascular or vascular signs, pain, traumatic, orthopaedic, rheumatological signs. Other signs were written with occurrences of less than 20 responses: changes in general condition, inflammation, digestive, infectious, paediatric. In the multidisciplinary category, the majority of responses (n=14) were in favour of collaboration with paramedics or to refer to a specialist. The diagnostic examinations specified (n=25) were mainly X-rays, followed by MRI, ultrasound and blood tests.

### 5.2.3 Patients recommended by GPs to osteopaths

The percentages of patients recommended by GPs to osteopaths ranged from 0% to 45%, with a median of 3.33% and the three quartiles at 6.67% of the patients' osteopaths received in a month.

There was a significant correlation with these items:

- The correlation was moderate (0.516) for the quality of collaboration and the percentage of patients recommended by a GP (Spearman Rho  $p$ -value $<0.001$ ). The median assessment for the quality of collaboration was "good" for the two quartiles of osteopaths receiving the most patients from GPs and "mediocre" for the quartile receiving the fewest patients from GPs.

- The correlation between the communication quality indicator and the percentage of patients recommended by a GP was low (0.440 Spearman Rho  $p$ -value $<0.001$ ). The quartile of the sample receiving the most patients from the GPs evaluated the quality of communication with a median of 'good' whereas the quartile receiving the least had its median of 'mediocre' quality.

- The correlation was low (Cramer's  $V = 0.332$ ) for the declaration of a business relationship with a GP and the percentage of patients recommended by GPs (Chi-Square Test Asymptotic significance $<0,001$ ). The percentage of recommended patients was grouped into categories according to quartiles: 0 to 0,91%; 0,92 to 3,32%; 3,3 to 6,66%; more than 6,67%). The median percentage of patients recommended by GPs was 4.26% in the group of osteopaths declaring a relationship with a GP compared with 1.67% for those declaring no relationship.

- With a very low association (Cramer's  $V = 0,204$  Chi-Square Test Asymptotic significance $=0,031$ ). The percentage of recommended patients was grouped into categories according to quartiles: 0 to 0,91%; 0,92 to 3,32%; 3,3 to 6,66%; more than 6,67%), the fact of not having completed training hours was associated with a lower percentage of receiving patients from GPs: median 2.8% compared to 4.4% for the group who said they had completed training.

There was no significative association with year of graduation, gender or other demographic data (Chi-Square Asymptotic significance $>0,05$ ).

There was a very low inverse association ( $\Phi=-0.277$ ) between having a professional relationship with a GP and being a recent graduated, less than five years (Chi-Square Test Asymptotic significance  $<0,001$ ). The sub-group graduated between 2024 and 2019 ( $n=58$ ) was the only one to report, having no business relationship with GPs.

Most of the patients recommended by the GPs had musculoskeletal complaints (132 occurrences of 163 responses), mainly concerning the back. There were also functional complaints (digestive, gynaecological or paediatric).

The last significant correlation in this section was a low correlation (0.302 on a Spearman Rho  $p$ -value  $<0.001$ ) between the percentage of patients referred to GPs and the percentages of patients recommended by GPs to osteopaths. The osteopaths who referred the fewest patients to GPs received the fewest patients recommended by GPs and, likewise, those who referred a lot of patients to GPs also received a lot of recommendations from GPs. Analogous results were found for the sub-group of osteopaths with few patients recommended by GPs who were also those who referred few patients and the opposite for those with many patients recommended by GPs who were also those who referred many patients.

### 5.3 Means of communication used

Table 3. Means of communication used between osteopaths and GPs. **Median** in bold.

	Letter or medical prescription	Email, message	Phone	In person	Through the patient	Other
Never % (N)	8,9 (19)	31,5 (67)	33,8 (72)	42,7 (91)	2,8 (6)	<b>22,5 (48)</b>
Rarely % (N)	19,2 (41)	<b>16,9 (36)</b>	<b>27,2 (58)</b>	<b>19,2 (41)</b>	5,6 (12)	3,3 (7)
Sometimes % (N)	<b>26,3 (56)</b>	20,2 (43)	23 (49)	15,5 (33)	17,4 (37)	3,3 (7)
Often % (N)	28,2 (60)	20,7 (44)	8,9 (19)	11,7 (25)	<b>54 (115)</b>	1,4 (3)
Always % (N)	15,5 (33)	5,2 (11)	1,9 (4)	4,2 (9)	18,3 (39)	0,5 (1)
Missing % (N)	1,9 (4)	5,6 (12)	5,2 (11)	6,6 (14)	1,9 (4)	69 (147)
Total % (N)	100 (213)	100 (213)	100 (213)	100 (213)	100 (213)	100 (213)

The most frequently used mean of communication for the sample was “through the patient”, followed by “letters or medical prescriptions”.

There was a significant association with these items:

-The association was moderate (Cramer's  $V=0,563$ ) between sharing a workplace with a GP and face-to-face communication (Chi-Square Asymptotic significance $<0,001$ ). Most osteopaths who shared a workplace ‘often’ spoke with a GP, while most osteopaths who did not share a workplace ‘never’ spoke face-to-face with a GP.

-The association was low (Cramer's  $V=0,308$ ) between being a recent graduated and the frequent use of letters and prescriptions (Chi-Square Asymptotic significance $<0,001$ ). Most young graduated ‘often’ used letters and medical prescriptions (37,7% in a group of 53 young osteopaths with none missing value) whereas most of the others used them

'sometimes' (28,1% in a group of 160 osteopaths who graduated before 2019 with 4 missing values)

- The association was very low (Cramer's  $V=0,196$ ) between the percentage of recommended patients and the frequent use of e-mails. (Chi-Square Asymptotic significance=0,027 The percentage of recommended patients was grouped into categories according to quartiles: 0 to 0,91%; 0,92 to 3,32%; 3,3 to 6,66%; more than 6,67%). The two quartiles who received the fewest patients recommended by the GPs reported 'never' using e-mail, whereas the two quartiles that received the most patients recommended by the GPs reported 'often' using e-mail.

The sub-group who rated the quality of collaboration and communication as 'good' or 'excellent' (N=70) was compared with the sub-group who rated it as 'mediocre' or 'none'(N=50), the difference between them was notably in the use of emails and messages, phone and face-to-face communication. The sub group 'good or excellent quality' used them 'sometimes' (median) compared with 'never' (median) for the subgroup 'mediocre' quality or none. Both groups used letters/prescriptions and communication through patients with a similar median (and non-significant correlation).

## 5.4 Factors associated with the quality of collaboration and communication

### 5.4.1 The quality of collaboration between GPs and osteopaths

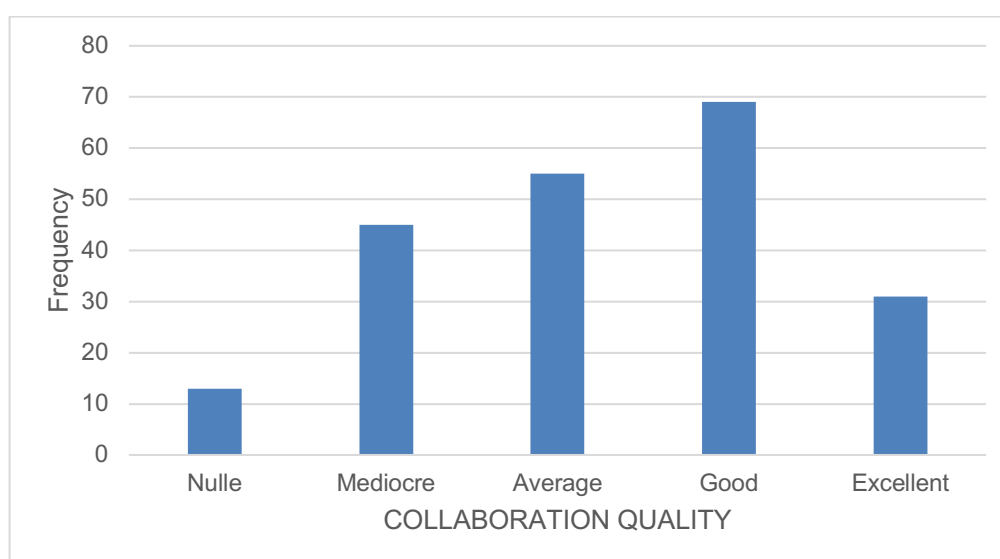


Figure 2. Collaboration quality. Median: Average / Missing values = 0

Most respondents reported the quality of collaboration as good (median: average).

Collaboration was identified as significantly different from other groups in those cases:

- Having a business relationship with a GP was moderately associated with the quality of collaboration (Cramer's  $V = 0,498$  Chi-Square Test Asymptotic significance  $<0,001$ ). The median quality of collaboration was 'good' for those who had a relationship, compared with a median between "mediocre" and "average" for those without any relationship.

- The association was low (Cramer's  $V = 0,229$ ) for sharing a workplace with a GP and the quality of collaboration (Chi-Square Test Asymptotic significance  $=0,025$ ). The median quality of collaboration was 'good' for those who shared a workplace and 'average' for those who did not.

- The correlation was low (0.208) for the number of patients recommended by GPs to osteopaths and the quality of collaboration (Spearman Rho  $p$ -value  $=0.002$ ). The median quality of collaboration was 'good' for the 3rd and 4th quartiles, compared with 'mediocre' for the quartile receiving the fewest patients from GPs.

The most general factor promoting the collaboration were communication with a common, clear language; communication tools (emails, health record, letter, patient, files shared in health centres) and interactions between GPs and osteopaths (GPs' experience as osteopaths' patients, shared workplace, geographical proximity, shared structures, being known as osteopaths in a territory). The other favourable elements mentioned were: the defined and known sphere of competence, the safety: osteopaths' triage skills, clinical examination, anatomical, semiological and pathological knowledge. Finally, the osteopaths mentioned the complementary roles of the two professions.

Communication also emerged as the principal limiting factor in collaborative efforts, with the use of some esoteric language, osteopathic concepts, the absence of secure communication means and press articles. Next element was the limited context: legal status, political and trade union, healthcare pathways and non-university training. Moreover, uncertainties about roles, lack of recognition, lack of evidence and illegal practices were identified as obstacles to effective collaboration between osteopaths and GPs. The last element mentioned by some of the respondents was the financial aspect, with the cost of osteopathic sessions supported by patients.

The main two topics put forward for improving collaboration were communication (with a secure public communication platform: GDPR) and legal aspects (recognition of status,

state diploma, intra-professional regulation, governance structure, HAS recommendation). The territorial approach was also mentioned with the role played by town halls, health centres and territorial professional health communities. To improve interaction between professionals, joint training courses for GPs and osteopaths could be set up. Patients could be involved in this improvement through integrative medicine. Finally, research and researchers could help develop all the above points.

#### 5.4.2 The quality of communication between GPs and osteopaths

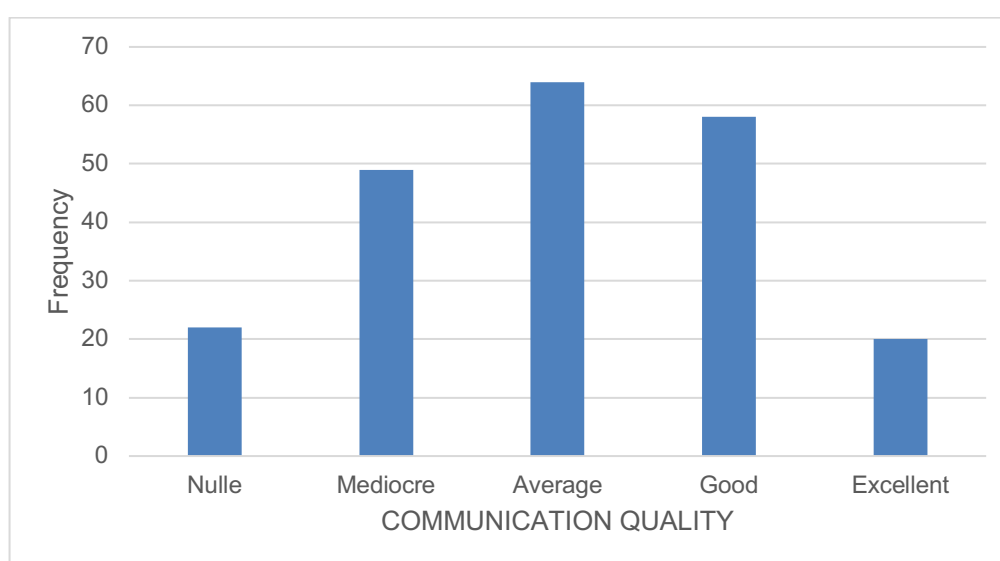


Figure 3. Communication quality. Median: Average / Missing values = 0

Most respondents reported the quality of communication as average (median: average).

The evaluation was significantly different for the group of osteopaths declaring:

- having a business relationship with a GP with a moderate association strength with the quality of communication (Cramer's  $V = 0.438$  with Chi-Square Test Asymptotic significance  $< 0,001$ ). The quality had an 'average' median for those declaring to have a relationship and a 'mediocre' median for those declaring not to have one.

- those who had undergone training with a low association strength with the quality of communication (Cramer's  $V = 0,236$  with Chi-Square Test Asymptotic significance  $= 0,018$ ). Quality had a 'good' median for those who had undergone training compared with 'average' for those who had not.

- The association was weak (Cramer's  $V = 0,255$ ) between being a recent graduated and the quality of communication (Chi-Square Test Asymptotic significance  $= 0,008$ ). Most recent graduates rated the quality of communication with GPs as 'average' (34% in a group

of 53 osteopaths who graduated between 2019 and 2024) whereas older graduates rated the quality of communication as 'good' (33,1% in a group of 160 osteopaths graduated who before 2019)

- the number of patients sent by GPs with a very low correlation with the quality of communication (0.176 Spearman Rho p-value=0.010). Quality was rated with a median 'good' for the quartile receiving the most patients from GPs, while it was rated with a median 'mediocre' for the quartile receiving the least patients from GPs.

Osteopaths indicated fewer qualitative elements regarding communication than they did as regards to collaboration. The elements that favoured communication were means of communication with instant messaging, a short and effective common language and SBAR-type recommendations (Situation, background, assessment, recommendation). The factors limiting communication were: lack of time, non-response or intermediaries (medical secretaries, communication through patient) and inappropriate discourse. The ideas for improving communication between these professionals were interprofessional training, an osteopathic governance structure and real-life meetings.

## **6 Discussion**

### **6.1 Sample**

Our sample of 213 osteopaths represented 1.4% of the total population of French osteopaths, based on 15 043 practitioners from the report by Gady-Cherrier and Zantman (2022). The number of participants remains below our projected target, despite the fact that our project was well received by organisations and osteopaths. This percentage of the population indicates that the study cannot be generalised to the whole population, and that the external validity is low. Although the Opera French study (Wagner et al., 2023) presented a larger number of participants, authors discuss the same conclusion regarding the difficulty of recruiting French osteopaths in research.

The majority of respondents graduated after 2007, which is consistent with the trend in the number of graduates in France. In France, non-doctors were entitled to be recognised as osteopath in 2002 (Article 75 of Law 2002-303). Given the five-year training period required to qualify as an osteopath, it is reasonable to observe an increase in the number of practitioners from 2007 onwards. The official recognition of the profession is likely to have enhanced its visibility and credibility, thereby, contributing to its

growing attractiveness. Moreover, the figures from the other studies are consistent with ours (Osteopathic International Alliance, 2020; Thomson et al., 2025; Wagner et al., 2023). The osteopath characteristics of our sample (self-employed and area of exercise) are consistent with the French and international studies (Morin, 2017; Wagner et al., 2023)

The percent of respondents who were teachers is higher than in the general population of French osteopaths. According to Mhadhbi's estimates, there are approximately 1,550 osteopathy teachers, accounting for 10.3% of the total osteopath population. (Mhadhbi, 2023). In our sample, the proportion of OEI teachers was 36.6% (27.2% OEI and 9.4% OEI and other place). This high proportion is linked to the choice of sampling through organisations (in particular OEIs) and perhaps an attractiveness of OEI teachers for taking part in research. Moreover, it is consistent with the evolution of osteopathy education regarding the role of evidence and the knowledge updating (L'Hermite et al., 2025a; L'Hermite et al., 2025b).

Our sampling through OEI and other organisations had probably led to a not representative geographical distribution, an over-representation of the Occitanie region and under-estimation of the Ile de France region compared with demographics and other studies (Wagner et al., 2023). The percentage of osteopaths who were also healthcare professionals (physiotherapist, nurse, etc) was close to Osteo-TAQfr study (Thomson et al., 2025). No correlation was found between healthcare professionals/osteopaths and more collaboration in our study as in the study on osteopaths in paediatric settings in Canada (Morin, 2017). Unless the diversity and small numbers of respondents in this category may lead to a lack of representativeness. Other elements were not explored in our data collection, such as the time spent practising as a healthcare professional, graduation year, and whether or not both professions were practised.

## 6.2 Patients

The median number of patients seen (90 over the last few months) is consistent with the Wagner study (median 21-25/week). (Wagner et al., 2023) The percentage of consultations referred to GPs (6.67%) is lower than that found in the Canadian paediatric population (21%) (Morin, 2017). In contrast to the Canadian study, our analysis encompasses the entire osteopath population—both paediatric and adult—without differentiation. More details on the patients referred would have enabled more comparisons.

Young graduates referred more patients, but it is difficult to know whether it is related to their short professional experience or the evolution of the training. The 2014 Decree had regulated the time spent per competences during initial training, including fundamental knowledge: semiology and pathology, and practical learnings: clinical examination and identify red flags. And as we have already seen, training has evolved in recent years, favouring literature and evidence-based practice (Decree n°2014-1505; L'Hermite et al., 2025a; L'Hermite et al., 2025b)

A claimed business relationship between osteopaths and GPs was unrelated to a shared workplace and also unrelated to the percentage of patients referred by osteopaths, but correlated with the number of years after osteopathy graduation and also correlated with the percentage of patients recommended by GPs. Hence, the correlation between the year after graduation and a business relationship with GPs leads us to think that the time spent after graduation would allow to build a relationship with GPs and to increase the number of patients recommended by GPs. Therefore, a professional relationship leads GPs to collaborate more with osteopaths. The business relationship and the years spent lead GPs to know more osteopaths and their sphere of competence. This is a prerequisite for collaboration (Gray and Orrock, 2014; Morin, Desrosiers and Gaboury, 2018; Seaton et al., 2020). As collaboration was first explored in medical and nursing circles to improve the quality and safety of care, it makes sense that physicians to have key elements.

For osteopaths, a business relationship did not lead to work in higher proportions, but was related to a better quality of the collaboration. The elements correlated to a higher percentage of patients referred to a GP (recent graduated, receiving few of patients per month) do not enable us to understand the factors that lead osteopaths to work more closely with GPs. As Morin had done in her thesis, it would be useful to go further with a qualitative study. The benefits of a mixed method (quantitative and qualitative) have been developed by Creswell in his book about research (Cresswell, 2022). As emphasised by D'Amour, collaboration requires construction, a common place is not enough to collaborate, which is reflective of the lack of correlation between sharing a workplace and the quantity or quality of collaboration that we observed. Establishing an efficient collaboration is a challenge for healthcare and its quality in the patients' interest. (D'Amour et al. 2005; Mickan et al., 2010; Morin, 2017; Seaton et al. 2020).

Patients referred by GPs presented with conditions that fell within the training and legal scope of osteopathic practice, as they suffered from functional troubles and musculo-skeletal pain (decree n°2007-435). This observation is consistent with the most frequent reasons for osteopathic consultations mentioned in various French or international studies (Dubois et al., 2012; Ellwood and Carnes, 2021; Marangelli, Tavernier and L'Hermite, 2024; Morin and Aubin, 2014; Schmid et al., 2021; Wagner et al., 2023). This also aligns with the GP's coordinating role in France (Law n°2009-879 article 36) and the main reasons to visit a GPs: functional troubles and chronic pathologies (Byrne et al., 2022; Ouafik et al., 2023; Roenneberg et al., 2019). The percentage of patient recommended is difficult to compare with other figures. In their sample, Schmid et al. noted that two-third of the GPs frequently or occasionally recommended patients to osteopaths. It also could be interesting to follow Morin's thesis and question the GPs on the evaluation of the quality of the relationship with the osteopaths, the number of patients referred to an osteopath, their knowledge about osteopathy. (Morin, 2017; Schmid et al., 2021)

The presence of training was correlated with the percentage of patients recommended by GPs, but the question in the survey was not precise enough, and included both reading and face-to-face training. Here, it was more indicative of the transformation of interest in collaboration and communication into learning time (alone or in CPD organisations). Although lifelong professional training is mandatory (Law 2002-303; Decree 2007-435), no neither private nor public bodies are currently designed to oversee the implementation of such training. It was impossible to obtain precise figures regarding the quality and amount of training hours carried out. All the same, Wagner et al. noted that three quarters of their sample had taken part in CPD the previous year (Wagner et al., 2023).

The reasons to refer a patient to a GP complied with the legal requirements, in particular cases falling outside the osteopath's scope of practice and requiring a medical diagnosis (article 2 of Decree n°2007-435). Clinical signs that may be linked to non-functional trouble were mentioned as reason to refer to a GP. These results are consistent a previous study (Wagner et al., 2023). However, we do not know whether the practices were correct because the question related to referred patients and not to monitoring the state of health of all patients received. Furthermore, the guidelines concerning patient or condition requiring to refer to a GP have not yet been submitted (decree n°2007-435). No correlation between the quality of the collaboration and the number of

patients referred to a GP suggests that other unexplored elements underlie the cooperation with other professionals.

When osteopaths referred a patient to a GP looking for multi-disciplinarity (physicians' specialists, examination or physiotherapists), this is consistent with the reorientation noticed by Wagner et al. and with patients' care pathways (Law n°2009-879 article 36; Wagner et al., 2023). A patient navigates between different specialists and examinations during their care pathway. This collaboration including osteopaths seems to be consistent with the integration of osteopaths as health professionals in the future.

### 6.3 Collaboration and communication

Even sharing a workplace with a general practitioner did not necessarily entail any professional interaction between the two. Therefore, means of communication should be tools for collaboration. (D'Amour et al. 2005; Seaton et al., 2020) Whether formal or informal, each medium of communication has its own characteristics. In our sample, the vast majority of communication took place through the patient, followed by formal written means (letters and prescriptions), which were sometimes used, and lastly e-mails, calls and direct contact, which were rarely used. Morin et al., found the same order of use in the Canadian osteopathic paediatric population: through the patient and then written communication. In their study, osteopaths also healthcare professionals found it easier to exchange information in writing, which was not the case in our sample. (Morin, Desrosiers and Gaboury, 2017b). The absence of association may be linked to the small number of this category in our sample.

Communication through the patient raises questions about the reliability and transmission of the message. Authors have already noted the risks of misinterpretation of the message when it is transmitted by a third party and raise the question of patient safety if the patient is referred for medical conditions. We also wonder whether transmission really allows continuity of care when in transit by the patient. (Decree n° 2016-994; Desrosiers and Gaboury, 2017b; Penney et al., 2015)

About written communication, letters and prescriptions were sometimes used but e-mails and message were rarely used. Younger graduates wrote more often than older ones. This could be linked to the evolution of the initial training. Perhaps younger graduates also had more time because they had fewer patients per month than older osteopaths. Even if communication was more frequent, its quality was poorer, which could

be linked to a lack of a business relationships and networks. However, the poorer quality of communication did not reduce the number of collaborations, in fact, no correlation was found between the percentage of patients referred by GPs and whether the respondents were recent graduates.

A secure exchange platform to guarantee data protection and respect confidentiality dedicated to these professionals seems to be missing. Mikan for WHO has already pointed to the lack of a common channel as a barrier to cooperate (Mikan et al., 2010). This platform would facilitate the exchange of mail and prescriptions, and the secure sharing of healthcare data.

In terms of communication, the use of a common language appears to facilitate more effective exchanges, as opposed to technical jargon or esoteric terminology. This issue once again raises the role of the patient as an intermediary in interprofessional communication. Adding an intermediary, with different representations and expectations further complicates the possibility of having a common language. (Morin, Desrosiers and Gaboury, 2018; Seaton et al., 2020; Swihart, 2016)

The 2014 HAS recommendation for healthcare professionals advocates the use of a standardized model designed to ensure the comprehensive and secure transmission of information: Situation, Background, Assessment and Recommendation (Cohen, 2021; Swihart, 2016; SAED recommendation HAS 8 October 2014). This recommendation cited by some osteopaths in our sample shows the interest in improving their communication beyond the profession's recommendation. Standardizing our communications along the same lines as those of healthcare professionals would perhaps enable us to approach a common language and improve collaboration.

The osteopaths interviewed by Morin said they were discouraged by the lack of response from GPs (Morin, Desrosiers and Gaboury, 2018). Without a qualitative study, we cannot conclude why there were little written communication between these professionals in ours. However, the difficulties in communicating with GPs are consistent with their lack of time: working 50h a week and an average of 16 min with a patient (Anguis et al., 2021; Breuil-Genier and Goffette, 2006; Moyal and Bergeron, 2019). The question would be how our collaboration could be efficient for GPs and enable them to improve patient healthcare quality in such a short time.

Finally, the diversity of French osteopaths may also lead to different methods of collaboration and communication. Both opposing conceptions of professional practice among French osteopaths - “technical rationality and professional artistry” - along with the spectrum of intermediate positions explored by Thomson (Thomson et al., 2025), may be a starting point to explore the influence of conception on communication and collaboration.

## 6.4 Limitations

Biases related to study type, sampling and question design may be identified:

- Convenience sampling (Muijs, 2004: 40) Diffusion by certain OEIs and organisation may prevent the sample from being representative of all French osteopaths. Non-representativeness in terms of geographical distribution and some demographic characteristics as proportion of teacher in OEI can be a sign of it. Generalisation could only be achieved in populations with similar characteristics.

- Selection bias (Choi and Pak, 2004): respondents may be those most interested in the subject.

- About the design survey:

Open-ended questions used in quantitative surveys are biased because data saturation is not achieved (Choi and Pak, 2004; Thomson, Petty and Scholes, 2014).

Questions may be confused despite the pilot testing (Choi and Pak, 2004). In our survey, there were a confusion between questions on collaboration and communication. Instead of using both words, the different elements of collaboration could have been explored: “shared philosophy; communication and clinical interaction; physical environment; power and hierarchy; and financial considerations” (Seaton et al., 2020)

The training-related question was imprecise and brought a bias. It would require to reformulate the question taking into account the related literature. The question of sharing workplace wasn't enough documented. A question on healthcare networks or territories would have been more relevant.

## 6.5 Perspectives

Exploring the collaboration and integration of osteopaths into the healthcare network is an important and highly issue in France and more widely around the world. A better understanding of collaborative practices, while awaiting HAS recommendations and legal changes, will enable osteopaths to adopt a reflective and mature attitude.

The first point was the lack of participation (shared by Wagner et al., 2023). The question of increasing the response rate is crucial for future quantitative studies. Approaches to be explored include means, networks and social media to contact osteopaths in France. The form of survey, the motivation of professionals to respond could also be deepened as well as the means of federating the profession.

Our work could be deepened by a qualitative study of collaboration from the osteopaths and physicians' point of view. The interest of a mix-method quantitative and qualitative was developed by Creswell, 2022. The qualitative part could explore more broadly the factors that facilitate collaboration. In addition, exploring how to centre collaboration on the patient would be consistent with the enactive vision of a person embedded in an environment and person-centred care (Arrigoni et al., 2024; Cerritelli and Esteves, 2022; Gray and Orrock, 2014; Hutting et al., 2021; Morin, 2017; Schmid et al., 2021).

In addition to media improvements, said means of communication could be explored taking into account each objective of collaboration. The communication mean used to refer a patient for further medical examination may be different from that used to seek a multidisciplinary approach. Indeed, beyond the frequency of use, each means of communication has a different role and is used differently (Morin, Desrosiers and Gaboury, 2017b).

Lastly, the notion of areas in healthcare could be the solution to the confusion over shared workplaces and business relationship. Identifying existing territories potentially linked to collaboration in primary care, and effectively integrating osteopaths into these networks, could help identify a strategy to enhance collaboration in other areas.

## 7 Conclusion

The findings of this study indicate that osteopaths and GPs collaboration was very poor, particularly in relation to the number of patients they shared. Osteopaths referred 6.67% of the patients they saw to GPs. The associated factors with this collaboration included the overall number of patients treated and recent graduation. GPs recommended to osteopaths 4.90% of patients seen by osteopaths. Factors positively associated with this collaboration were the quality of collaboration and communication, the existence of a business relationship with a GP and a prior training in collaborative practices.

The reasons underlying collaboration were consistent with the motivations for frequent consultations and with mutual respect for each professional's sphere of expertise. Communication most commonly occurred through the patient, followed by written communication methods.

Most osteopaths reported a good quality of collaboration with GPs. However, there was a low correlation between perceived collaboration quality and factors such as the existence of a business relationship, shared workplaces and the number of patients recommended by GPs. Most osteopaths rated communication quality as average. Similarly, correlations were low for the business relationship and prior training, and very low for the number of patients recommended by GPs.

While the findings may not be fully generalisable, given that the sample represented only 1.4% of all French osteopaths, this study nonetheless provides valuable data on the nature of collaboration between osteopaths and GPs in France. The dataset may serve as a foundation for future research aimed at enhancing interprofessional collaboration and supporting the integration of osteopaths into the French healthcare system.

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### Appendix 1 Link between items of survey and research questions.

Research question	Item	Variable	Interpretation, analysis method	Source
<b>Demographics</b>	Gender	Nominal	Representativity of sample, distribution	(Wagner et al., 2023)
	Year of degree	Discontinuous	Representativity of sample, classify by category to correlate, distribution	(Wagner et al., 2023)
	Other degree, qualifications	Nominal	Classify by university level and create subcategory	(Wagner et al., 2023) (Schmid et al., 2021)
	Work status	Nominal	classify by category to correlate, distribution	(Wagner et al., 2023)
	Area of exercise	Nominal	classify by category to correlate, distribution	(Wagner et al., 2023; Schmid et al., 2021)
	Department number	Discontinuous	representativity of sample, distribution	(Wagner et al., 2023)
	Teaching activity	Nominal	classify by category to correlate	(Wagner et al., 2023)
<b>Number of</b>	Patients by month	Discontinuous	Calculate a percentage Key figures, median	(Morin, Desrosiers and Gaboury, 2017a)
	Patient referred to a GP	Discontinuous		
	Patient send by a GP	Discontinuous		
<b>Quality</b>	Quality of collaboration, of communication	Ordinal Scale	Key figures, median	(Morin, Desrosiers and Gaboury, 2017a; Morin, Desrosiers and Gaboury, 2018)
<b>Influencing factors</b>	Working with GP, same office	Nominal	Looking for correlation	(Schmid et al., 2021; Wagner et al., 2023)
	Professional relationship with GP	Nominal	Looking for correlation	(Morin, Desrosiers and Gaboury, 2017a and Morin, Desrosiers and Gaboury, 2017b)
	Clinical problem, reason of consultation	Nominal	Create sub category, looking for correlation	(Morin, Desrosiers and Gaboury, 2018; Schmid et al., 2021; Wagner et al., 2023)
	Aim	Ordinal	Create sub category, looking for correlation	(Morin, 2017; Morin, Desrosiers and Gaboury, 2018; Schmid et al., 2021; Wagner et al., 2023)
	Encourage collaboration and communication	Nominal	Create sub category	(Morin, Desrosiers and Gaboury, 2018)
	Limit collaboration and communication	Nominal	Create sub category	(Morin, Desrosiers and Gaboury, 2018)
	Improvement	Nominal	Create sub category	(Morin, 2017)
<b>Means</b>	Communication	Ordinal Scale	Key figures, median	(Morin, 2017; Morin, Desrosiers and Gaboury, 2017b, Morin, Desrosiers and Gaboury, 2018)
	Continuing Professional Development (CPD)	Nominal	Looking for correlation	(Morin, 2017; Wagner et al., 2023)

## **Appendix 2 Questions to survey: French and English version**

### **French version:**

#### **Démographie**

Genre : F / M /autre

Année de diplôme d'ostéopathie:

Autre diplôme ou qualifications (quelque soit le domaine):

Statut de travail (majoritaire dans votre activité avec les patients): indépendant (titulaire/collaborateur/remplaçant) / salarié

Lieu d'exercice : grande ville /petite ville/ campagne et numéro de département :

Est-ce que vous travaillez dans les mêmes locaux qu'un médecin généraliste : oui / non

Avez-vous une activité d'enseignement ? en école d'ostéopathie / en post grade / ailleurs / aucune

Combien de patients avez-vous reçu dans les 30 derniers jours ?

#### **Collaboration**

Avez-vous une relation professionnelle avec un médecin généraliste ? oui / non

Dans votre pratique, comment évaluez-vous la qualité de la collaboration avec les médecins généralistes ? Excellente/bonne/moyenne/médiocre/nulle

Combien de patients avez-vous adressé à un médecin généraliste (avant ou après prise en charge ostéopathique) dans les 30 derniers jours ?

Quels étaient les objectifs ?

- hors champ de compétence : Toujours/souvent/parfois/rarement/jamais

- prise en charge multidisciplinaire : Toujours/souvent/parfois/rarement/jamais

- besoin de diagnostic ou d'examen complémentaire : Toujours/souvent/parfois/rarement/jamais

- autre : préciser

Citez des éléments cliniques qui vous ont amené à adresser un patient à un médecin généraliste :

Combien de patients avez-vous reçu de la part d'un médecin généraliste dans les 30 derniers jours ?

Quels étaient les motifs de consultation ?

Citez des éléments favorisant la collaboration avec les médecins généralistes (de votre point de vue)

Citez des éléments limitant la collaboration avec les médecins généralistes (de votre point de vue)

Quels sont les éléments qui vous aideraient à améliorer la collaboration médecin /ostéopathe ?

**Communication**

Dans votre pratique, comment évaluez-vous la qualité de la communication avec les médecins généralistes ? Excellente/bonne/moyenne/médiocre/nulle

Quels sont vos moyens de communication habituels avec les médecins généralistes ?

Lettre/prescription : Toujours/souvent/parfois/rarement/jamais

mail, message électronique : Toujours/souvent/parfois/rarement/jamais

téléphone : Toujours/souvent/parfois/rarement/jamais

en personne : Toujours/souvent/parfois/rarement/jamais

par le patient : Toujours/souvent/parfois/rarement/jamais

autre : préciser

Citez des éléments favorisant la communication avec les médecins généralistes (de votre point de vue)

Citez des éléments limitant la communication avec les médecins généralistes (de votre point de vue)

Quels sont les éléments qui vous aideraient à améliorer la communication médecin /ostéopathe ?

Avez-vous déjà fait une formation sur la collaboration ou la communication interprofessionnelle ? oui / non

Si oui, par quel moyen : formation initiale / formation post grade / lectures / discussions informelles/ autre :

**Questions to survey: English version**

**Demographics**

Gender: F / M / Other

Year of degree:

Other degrees or qualifications:

Work status: independent (owner/collaborator/ substitute) / employee

Workplace: big city / small town / countryside. Department number:

Are you sharing a workplace with a GP? yes/ no

Do you have any teaching activity? in OEI / CPD / other / none

How many patients have you seen in the last 30 days?

**Collaboration**

Have you got any business relationship with a GP? yes/no

Could you rate the quality of collaboration with GPs within your practice?

Excellent/good/average/mediocre/negligible

How many patients have you referred to a GP (before or after osteopathic treatment) in the last 30 days?

What were the objectives when you referred patients to a GP?

- outside field of competence: Always/often/sometimes/rarely/never
- multidisciplinary healthcare: Always/often/sometimes/rarely/never
- need for diagnosis or further examination: Always/often/sometimes/rarely/never
- other: specify

Name some clinical elements that have led you to refer patients to a GP:

How many patients do GPs send you in the last 30 days?

Name some reasons of consultation of these patients :

Name some factors that foster collaboration with GPs (in your opinion):

Name some factors that limit collaboration with GPs (in your opinion):

What would help you improve collaboration with GPs?

### **Communication**

Could you rate the quality of communication with GPs within your practice?

Excellent/good/average/mediocre/negligible

How do you communicate with GPs?

Letter or medical prescription: Always/often/sometimes/rarely/never

Email, message: Always/often/sometimes/rarely/never

Phone: Always/often/sometimes/rarely/never

In person: Always/often/sometimes/rarely/never

Through the patient: Always/often/sometimes/rarely/never

other:

Name some factors that foster communication with GPs (in your opinion):

Name some factors that limit communication with GPs (in your opinion):

What would help you improve communication with GPs?

Have you ever taken a training course on interprofessional collaboration or communication? yes / no

If yes, what were the means of this course? OEI / CPD / readings / informal discussions / other

### **Appendix 3: Consent participant, French version**

#### **Consentement du participant**

Sujet de mémoire : Pratique de collaboration des ostéopathes avec les médecins généralistes en France.

Lieu : Metropolia University of Applied Sciences

Etudiante : Marine Contreras, contreras.marine@gmail.com sous la supervision de Eija Mestala.

Je soussigné.e ..... ai été invité.e à participer à une étude. Le but de cette recherche est d'évaluer les pratiques de collaboration des ostéopathes en France avec les médecins traitants, leur fréquence et les facteurs pouvant influencer cette collaboration.

J'ai lu et compris l'*information au participant*. Cette information m'a apportée suffisamment d'information à propos de l'étude, le but et la réalisation de l'étude, à propos de mes droits, ainsi que des bénéfices et risques encourus. J'ai eu l'opportunité de poser mes questions à propos de l'étude et j'ai reçu des réponses satisfaisantes.

J'ai eu suffisamment d'information sur la collecte, le traitement et le transfert de mes données personnels durant l'étude et la *notice de confidentialité* m'a été fourni.

Je n'ai pas reçu de pression ou de moyen de persuasion pour ma participation.

J'ai eu suffisamment de temps pour considérer ma participation à l'étude.

J'ai compris que ma participation est entièrement volontaire et je suis libre de retirer mon consentement à tout moment sans avoir à donner de raison.

Je suis conscient que si je me retire de l'étude ou si je retire mon consentement, toutes les données recueillies auprès de moi avant mon retrait peuvent être incluses dans les données de recherche.

En signant ce document, je confirme que je consens volontairement à la participation de cette étude. J'autorise le traitement des données personnelles recueillies sur ce questionnaire.

---

En cochant la case, je confirme que je suis en accord avec les éléments ci-dessus.

#### **Appendix 4: Participant Information Sheet, English version**

##### **Study title: Collaborative practices of osteopaths with general practitioner in France.**

###### Invitation to participate in a research study

I would like to invite you to participate in our research to describe French osteopaths' collaborative practices with general practitioners. We are looking for osteopaths practicing in France (whatever their practice) in order to study their collaboration with general practitioners.

This information sheet describes the study and your role in it. Before you decide, it is important that you understand why the research is being done and what it would involve for you. Please take time to read this information, and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please ask us. After that we will ask You to sign a consent form to participate in the study.

###### Voluntary nature of participation

The participation in this study is entirely voluntary. You can withdraw from the study at any time without giving any reason and without there being any negative consequences. If you withdraw from the study or withdraw your consent, any data collected from you before the withdrawal can be included as part of the research data.

###### Purpose of the study

This study aims to describe the collaboration of osteopaths with general practitioners in France. We plan to numerically describe and describe the modalities of this collaboration between professionals in health care.

###### Who is organising and funding the research?

No partner or organisation has funded this research. The principal investigator, Marine Contreras, declares no conflict of interest and no funding for this research. The Metropolia UAS University of Helsinki provides logistical support by providing software to facilitate research (Elomake, SPSS). Eija Metsälä, doctor and lecturer at Metropolia, supervises this research organised during the Master Osteopathy. This master's degree is under the responsibility of Laura Lee Caloniuss.

###### What will the participation involve?

We expect participants to complete the questionnaire in full, which should take them 10 minutes to complete. The questionnaire must be completed online from a computer or

smartphone. The data collected will allow us to describe collaborative practices in France. The demographic data will allow us to assess the representativeness of the sample and divide the data into subcategories.

#### Possible benefits of taking part

There is no individual benefit to participating in this research. The expected benefits are at the professional and research level. We believe that better knowledge of the practices of our profession with other health professionals will allow better inclusion within health professionals.

#### Possible disadvantages and risks of taking part

We have not identified any proven or potential risks of participating in this research.

#### Financial information

Participation in this study will involve no cost to you. You will receive no payment for your participation. Apart from Metropolia's logistical support, no structure finances this project.

#### Informing about the research results

The research results will be published upon presentation of this dissertation and publicly accessible on the website <https://www.theseus.fi/>. The published data will not allow this study's participants to be recognized.

#### Termination of the study

Researchers may terminate this research before publication in the event of Metropolia terminating the Master program.

Further information related to the study can be requested from the researcher.

#### Contact details of the researchers

Researcher Marine Contreras

Tel. number: +33 6 79810310 Email: [contreras.marine@gmail.com](mailto:contreras.marine@gmail.com)

Supervisor: Eija Metsälä

Metropolia University of Applied Sciences Helsinki

Tel. number: +358 50 347 8177 - Email: [Eija.Metsala@metropolia.fi](mailto:Eija.Metsala@metropolia.fi)

## **Appendix to the Participant Information Sheet: A Privacy Notice for Scientific Research**

Within this study, your personal data will be processed according to the European Union General Data Protection Regulation (679/2016) and current national regulation. The processing of personal data will be described in the following items.

Data controller of the study

Marine Contreras

Metropolia University of Applied Sciences (Helsinki)

Contact person for matters related to the processing of personal data

Marine Contreras - Tel. number: +33 6 79810310 - Email: [contreras.marine@gmail.com](mailto:contreras.marine@gmail.com)

Types of personal data that will be collected

Gender, profession, year of diploma, other qualifications, department of practice.

There is no statutory or contractual requirement to provide your personal data, participation is entirely voluntary.

Personal data will be collected also from other sources: none

Personal data protection principles

Elomake, SPSS, Word, Excel were used on a personal computer protected by a password.

For what purpose will personal data be processed?

The data collected will allow us to describe collaborative practices in France. The demographic data will allow us to assess the representativeness of the sample and divide the data into subcategories

Legal basis of processing personal data

The legal basis is a consent granted by the data subject. You have the right to withdraw the consent at any time as described in this Privacy Notice.

Nature and duration of the research (how long will the personal data be processed):

One-time research

Follow-up research

Duration of the research: September 2024 to June 2026

What happens to the personal data after the research has ended?

How the personal data will be processed after the research has ended:

Any research materials containing personal data will be destroyed

Data transfer outside of research registry: none.

Possible transfer of personal data outside the EU or the EEA:

Your data will not be transferred outside of the EU or the EEA.

Your rights as a data subject

Processing basis is consent granted by the data subject, please find the following rights (valid until the end of the research)

- Right to obtain information on the processing of personal data
- Right of access to your personal data
- Right to rectification
- Right to erasure (right to be forgotten)
- Right to withdraw the consent regarding processing of personal data
- Right to restriction of processing
- Notification obligation regarding rectification or erasure of personal data or restriction of processing
- Right to data portability
- The data subject can allow automated decision-making (including profiling) with his or her specific consent
- Right to notify the Data Protection Ombudsman if you suspect that an organisation or individual is processing personal data in violation of data protection regulations.

If the purposes for which a controller processes personal data do not or do no longer require the identification of a data subject by the controller, the controller shall not be obliged to maintain, acquire or process additional information in order to identify the data subject for the sole purpose of complying with this Regulation. If the controller cannot identify the data subject the rights of access, rectification, erasure, notification obligation and data portability shall not apply except if the data subject provides additional information enabling his or her identification.

You can exercise your rights by contacting the data controller of the study.

Personal data collected in this study will not be used for automated decision-making

In scientific research, the processing of personal data is never used in any decisions concerning the participants of the research.

Pseudonymisation and anonymisation

All information collected from you will be handled confidentially and according to the legislation.

## **Appendix 5: Participant Information Sheet, French version**

### **INFORMATION AUX PARTICIPANTS**

Titre de l'étude : Pratique de collaboration des ostéopathes avec les médecins généralistes en France.

Invitation de participation à une recherche :

J'aimerais vous proposer de participer à notre recherche visant à décrire les pratiques de collaboration des ostéopathes français avec les médecins généralistes. Nous recherchons des ostéopathes exerçant en France (quelques soient leurs modalités d'exercice) afin d'étudier leur collaboration avec les médecins généralistes.

Cette information a pour but de décrire l'étude et votre rôle. Avant que vous preniez votre décision, il est important que vous compreniez comment cette recherche se déroule et ce que l'on attend de vous. Prenez le temps de lire ces informations et d'échanger avec nous si besoin. Si quelque chose n'est pas assez clair ou si vous voulez plus d'informations, vous pouvez nous contacter. Après avoir lu, nous vous demanderons de signer le consentement du participant.

Participation volontaire

Votre participation à cette recherche est entièrement volontaire. Vous pouvez vous retirer de cette recherche à tout moment sans avoir à donner de raison et sans qu'il n'y ait de conséquences pour vous. Si vous retirez votre consentement ou vous retirez de l'étude, toutes les données collectées avant ce retrait pourront être incluses dans les données de recherche.

But de la recherche

*Cette étude a pour but de fournir une description de la collaboration des ostéopathes avec les médecins généralistes en France. Nous prévoyons une description numérique et des modalités de cette collaboration entre les professionnels de santé.*

Organisation et financement de la recherche

Cette recherche n'est financée par aucun partenaire ou organisme. La chercheuse principale : Marine Contreras ne déclare aucun conflit d'intérêt et aucun financement pour cette recherche. L'université Metropolia UAS d'Helsinki apporte son soutien logistique en mettant à disposition des logiciels pour faciliter la recherche (Elomake, SPSS). Eija

Metsälä, docteur et maître de conférence à Metropolia supervise cette recherche organisée lors du Master Osteopathy. Ce master est sous la responsabilité de Laura Lee Calonius.

#### Implication de la recherche pour le participant

Nous attendons des participants qu'ils remplissent le questionnaire en entier. Ce questionnaire devrait leur prendre 10min à remplir. Ce questionnaire est à remplir en ligne depuis un ordinateur ou un smartphone. Les données collectées permettront de faire une description des pratiques de collaboration en France. Les données démographiques permettront d'évaluer la représentativité de l'échantillon et de répartir les données en sous catégories.

#### Potentiels bénéfiques

Il n'y a pas de bénéfice individuel à participer à cette recherche. Les bénéfices attendus sont au niveau de la profession et de la recherche. Nous pensons qu'une meilleure connaissance des pratiques de notre profession avec les autres professionnels de santé permettra une meilleure inclusion au sein des professionnels de santé.

#### Potentiel risque et inconvénient

Nous n'avons identifié aucun risque avéré ou potentiel à participer à cette recherche.

#### Information financière

La participation à cette étude n'induit pas de dépense pour vous. Vous ne recevrez pas de dédommagement ou de contrepartie financière à votre participation.

En dehors du soutien logistique de Metropolia, aucune structure ne finance ce projet.

#### Résultats de la recherche

Les résultats de la recherche seront publiés à la présentation de ce mémoire et accessible publiquement sur le site <https://www.theseus.fi/> . Les données publiées ne pourront en aucun cas permettre de reconnaître les participants de cette étude.

#### Arrêt de l'étude

Les chercheurs peuvent mettre fin à cette recherche avant publication en cas d'arrêt du programme de Master par Metropolia.

Information complémentaires : des informations complémentaires sur l'étude peuvent être demandées.

Contact du chercheur et de son superviseur :

Chercheur : Marine Contreras

Tel. number: +33 6 79810310

Email: contreras.marine@gmail.com

Supervisor : Eija Metsälä

Helsinki Metropolia University of Applied Sciences

Tel. number: +358 50 347 8177

Email: Eija.Metsala@metropolia.fi

**Annexe à la fiche d'information du participant : Avis de confidentialité pour la recherche scientifique**

Dans le cadre de cette étude, vos données personnelles seront traitées conformément au règlement général sur la protection des données de l'Union européenne (679/2016) et à la réglementation nationale en vigueur. Le traitement des données personnelles sera décrit dans les points suivants.

Data controller of the study

Marine Contreras

Metropolia University of Applied Sciences (Helsinki)

Contact person for matters related to the processing of personal data

Marine Contreras

Tel. number: +33 6 79810310

Email: contreras.marine@gmail.com

Type de données personnelles collectées

Genre, profession, année de diplôme, autres qualifications, département d'exercice.

Il n'existe aucune obligation légale ou contractuelle de fournir vos données personnelles, la participation est entièrement volontaire.

Il n'y a pas d'autre source de collecte de données personnelles que les questionnaires répondus par les participants.

Personal data protection principles

Elomake, SPSS, Word, Excel ont été utilisés sur un ordinateur personnel protégé par un mot de passe.

#### But

Les données collectées permettront de faire une description des pratiques de collaboration en France. Les données démographiques permettront d'évaluer la représentativité de l'échantillon et de répartir les données en sous catégories.

#### Base juridique

La base juridique est le consentement accordé par la personne concernée. Vous avez le droit de retirer votre consentement à tout moment, comme décrit dans le présent avis de confidentialité.

#### Nature et durée de la recherche :

Recherche ponctuelle

Durée de la recherche : Septembre 2024 à Juin 2026

Que deviennent les données personnelles une fois la recherche terminée ?

Comment les données personnelles seront traitées une fois la recherche terminée :

Tout matériel de recherche contenant des données personnelles sera détruit

Transfert de données en dehors du registre de recherche : Aucune. Vos données ne seront pas transférées en dehors de l'UE ou de l'EEA.

#### Vos droits en tant que personne

Étant donné que vos données personnelles seront utilisées dans le cadre de cette étude, vous serez inscrit au registre de l'étude. Vos droits en tant que personne concernée sont les suivants (valables jusqu'à la fin de la recherche) :

-Droit d'obtenir des informations sur le traitement des données personnelles

-Droit d'accès à vos données personnelles

-Droit de rectification

-Droit à l'effacement (droit à l'oubli)

-Droit de retirer le consentement au traitement des données à caractère personnel

-Droit à la limitation du traitement des données

-Obligation de notification concernant la rectification ou l'effacement des données à caractère personnel ou la nouvelle limitation du traitement

-Droit à la portabilité des données

-La personne concernée peut autoriser la prise de décision automatisée (y compris le profilage) avec son consentement spécifique.

-Droit de notifier le médiateur pour la protection des données si vous soupçonnez qu'une organisation ou une personne traite des données à caractère personnel en violation des règles de protection des données.

Si les finalités pour lesquelles un responsable du traitement traite des données à caractère personnel n'exigent pas ou n'exigent plus l'identification d'une personne concernée par le responsable du traitement, ce dernier n'est pas tenu de conserver, d'acquérir ou de traiter des informations supplémentaires afin d'identifier la personne concernée dans le seul but de se conformer au présent règlement. Si le responsable du traitement ne peut pas identifier la personne concernée, les droits d'accès, de rectification, d'effacement, d'obligation de notification et de portabilité des données ne s'appliquent pas, sauf si la personne concernée fournit des informations supplémentaires permettant son identification.

Vous pouvez exercer vos droits en contactant le responsable du traitement de l'étude.

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Les données personnelles collectées dans cette étude ne seront pas utilisées pour une prise de décision automatisée

Dans la recherche scientifique, le traitement des données personnelles n'est jamais utilisé dans les décisions concernant les participants à la recherche.

Pseudonymisation et anonymisation

Toutes les informations recueillies auprès de vous seront traitées de manière confidentielle et conformément à la législation.

**Appendix 6: A Data Management Plan created using DMPTuuli****Title:** Collaborative practice between osteopath and general practitioner in France**Creator:** Marine CONTRERAS**Affiliation:** Metropolia University of Applied Sciences**Template:** DMP for Thesis**ID:** 25029**Start date:** 01-01-2024    **End date:** 30-06-2026    **Last modified:** 01-10-2024**1. General description of the data**

1.1. Briefly describe the data you collect and/or produce or that already exists, as well as their properties (type, file format, size, access rights, collection methods). Create a table or list of the data.

Confer Table 1

1.2. How you will ensure the consistency and accuracy of the data?

Before distribution, the questionnaire will be tested by 3 osteopaths and adapted based on feedback to ensure that the questions are properly understood and unambiguous.

**2. Personal data, ethical principles and legislation**

2.1. Is there any personal information in the data? If yes, enter in the supplementary information field: the personal data to be collected, whether there are special categories of personal data.

yes, demographic data is personal information used to correlate with the general population and to divide into subcategories.

2.2. Who has the main responsibility for the processing of personal data, i.e. controller-ship? If you do not collect personal data, you can skip this question.

Marine Contreras

2.3. What measures are required to ensure data protection in my thesis?

Survey via Elomake, which complies with the European Union's RGPD. The data will be exported to SPSS; the free texts will be reported by hand and divided into subcategories. The data processed by SPSS will be exported to a word processor and reported in the final rendering. The raw data will not appear in the final version.

2.4. Do you need an ethical review? To the additional information field: justification and possible implementation : No.

2.5. Are there other research ethical questions related to the data? No.

2.6. How will you manage the rights to the data you use, produce and share?

Processed data (averages, standard deviation... ) and subcategories could be shared and reused for further studies. No raw data will be shared (individual responses to questionnaires).

### **3. Data description and documentation**

How will you describe and document your data so that it is understandable for both yourself and others?

Demographic data will be described and compared with existing data in other publications.

Subcategories will be represented in graphs, visual designs or tables.

### **4. Storage and data security during the thesis process**

4.1. Describe here where the data will be stored and how it will be backed up during the thesis process.

The data will be stored on Elomake for the duration of the questionnaire and then transferred to SPSS via my password-protected personal computer.

4.2. Who has access to your data, what can those people do with the data, and how do you ensure the safe transfer of the data to your potential collaborators?

Me, no transfer of raw data and questionnaire responses.

### **5. Data after the thesis is completed: preserving, destruction or possible further use and opening**

5.1. Is the data or part of it preserved? If yes: describe which data or part of it.

No, only the processed data will be kept, not the original data, more information in Participant Information Sheet.

5.2. Will the data be destroyed or part of it? If yes, describe which data or part of the data, and how and when the destruction will occur.

Yes, the original data will be destroyed after the presentation.

5.3. Are you planning to further use or open your data or part of it? If yes, describe which data or part of it. Also describe whether the data will be opened for public use with a license, or whether it will be handed over to a specific party for further use, as well as the possible measures that opening the data or preparing for further use requires (for example, anonymisation, permissions from research subjects, agreements with collaborators).

No sharing of raw data. It is possible to use published data for other work with notification to the author and citation of work references.

### **6. Responsibilities and resources**

6.1. Who is responsible for data management and what kind of resources does data management require? Marine Contreras

Resources : Elomake, SPSS, Microsoft Word and Excel.