

'I just don't have the tools' - Italian osteopaths' attitudes and beliefs about the management of patients with chronic pain: A qualitative study

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a b s t r a c t

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

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

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

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

1. Introduction

Chronic pain is an ubiquitous, complex and challenging problem for manual therapists such as osteopaths, chiropractors and physiotherapists who are required to understand and respond to the contextual psychosocial dimension of the chronic pain experience, especially in musculoskeletal (MSK) conditions [18,51,61].

Recent advances in the understanding of pain [11,41,49,88] have

outlined that health professionals working with patients experiencing musculoskeletal pain need to be better equipped and go beyond the traditional biomedical structure/pathology-oriented explanations of pain in the evaluation, treatment and management of chronic pain conditions [65,66,89]. Firstly, because of ongoing changes in understanding pain experience, which is now accepted to involve complex neural processes including sensory [83], emotional [64], cognitive [52], and interoceptive processes [14,20]; secondly, because the influence of patient's beliefs and attitudes in altering pain development and control [17], together with the potential negative impact of practitioner's pain beliefs and behaviours when managing patients with chronic pain conditions, such as in chronic low back pain (CLBP) [16,44].

The traditional biomedical model seems to be unclear in establishing connections between tissue pathology and pain disability [5,25], clinic assessments, diagnosis of pathology and treatment outcomes in chronic MSK pain [28]. The biopsychosocial (BPS) model has been put forward as offering a more holistic [21] evaluation of a broader range of important factors influencing the development and management of chronic MSK pain (e.g. depression, anxiety, fear, or feeling psychologically distressed). Adopting a BPS approach in practice requires the clinician to consider the individual patient's pain experience in relation to their particular social and psychological contexts, which may lie outside more tradition physical pathophysiological findings of a biomedical approach [18]. Despite the ongoing requirement for the integration of the BPS model into MSK practice [46,58], pain management treatment [68,15] and medical education [1], it is important to note that the present BPS model is disputed as being vaguely defined, very general and not operationalized as behavioural terms for practitioners and patients [31,34,69], so as to perpetuate a reductionist approach in response to chronic pain [32]. Several authors (e.g. Refs. [84,85]) have highlighted the challenges that healthcare practitioners have to convey psychological and social factors in health promotion to their patients. This challenge also occurs in osteopathic practice [76], and it has been highlighted the need to define the core values in the development of an osteopath's professional identity [10].

Several qualitative studies describe how manual therapists have moved to apply a broad biopsychosocial view in the evaluation and management of chronic pain disorders [33,63,82]. However, there are several challenges in implementing a BPS approach into clinical practice [65,66]. In osteopathy, the existing literature highlights the complexity of interpreting a BPS approach, and produces questions about how to reconcile the recognition of this therapeutic style with evidence based healthcare, osteopathic principles [78,79], clinical reasoning and educational curricular [72]. Although osteopathic practice is considered to be a whole-person health-care [23,87], and the BPS described as an "explanatory model" [6] (pp 371-6) [22], the interpretation and practical application of this model in osteopathic practice is challenging, and the attempt to construct a more workable vision in clinical practice is limited [54,71] but developing.

In Italy, osteopathy is an emerging profession, with a large number of different osteopathic training programmes provided by different osteopathic institutions, and is currently under consideration for being recognised by law. For this reason there is no equal recognition of the qualifications with other European countries, and no standards of practice in place. The new European Standard on Osteopathic Healthcare Provision [7] for osteopathy presents an opportunity for Italy and other European countries working towards professional regulation, to improve the standards of professional education, training and practice. There is currently no research describing Italian osteopaths' beliefs, attitudes and perceptions regarding the evaluation and management of chronic pain sufferers, and how the BPS model is integrated when working with this complex and challenging patient population.

The aim of this qualitative study was to explore and describe how a sample of Italian osteopaths perceive and conceptualise the BPS model and their attitudes and beliefs in relation to how they evaluate, treat and manage patients with chronic pain.

2. Methods

The consolidated criteria for reporting qualitative research (COREQ) was used to structure the methods and findings sections of this paper [75].

A qualitative research design based on grounded theory method

(GTM) was used [9]. Data was collected through in-depth semi-structured interviews. The interviews were of 45-55 min duration and included questions related to participants' understanding of chronic pain and its management. Table 1 provides the interview guide used for this study. The interviews were conducted in Italian by the principal researcher (A.F) who is a practising osteopath, native Italian speaker and was a Masters student at the time of study, with no experience in qualitative research.

The participants were interviewed at a time and a place convenient to them. The interview was recorded, transcribed verbatim, and gathered for the analysis. A number was allocated to each participant to maintain confidentiality.

2.1. Participants and recruitment

A purposive sample of 11 osteopaths was recruited from a poster advertisement sent via email to 8 Italian osteopathic schools. The inclusion criteria were: osteopaths that had completed their study in osteopathy; a minimum of 5 years in clinical practice as an osteopath, and practising at least two days a week. Osteopaths working in the educational field were included in this study (Table 2). Exclusion criteria were: participants who did not meet the above inclusion criteria; anyone who met the inclusion criteria but did not wish to participate in the study or those who did not sign the consent form. An invitation to participate to this study, together with a copy of the Participant Information Sheet (PIS), was sent using email addresses of potential participants. These addresses were obtained by recommendation or with the collaboration of the administrative office of the involved Italian schools. The letter of invitation also invited participants to suggest other practitioners that might be able to meet the informational need of the study, and this constituted a process of snowball sampling [8].

Table 1
Semi-structured interview schedule.

Initial interviews (1-6)	Advanced interviews (7-11)
Can you tell me about your current experience with chronic patient and what do you do with persistent pain patients?	In general, what do you think about your management of patients with chronic pain? Difficult or easy?
Can you describe and discuss your thinking process while you evaluating and approaching patients with chronic pain conditions?	What difficulties do you face during your practice?
If your chronic patient does not improve as you wish, how is your new strategy to deal with it more successfully?	What are the biggest barriers to an effective management of chronic patients in your practice? Osteopathy related barriers and/or patients related barriers.
What is your understanding about the BPS in the context of Osteopathy? What do you think about it?	Would you like to add something to the discussion having before?

Table 2
Participants' characteristics.

Mean in years practice	14 (range 5-30)
Gender	9 males 2 females
Work setting	All worked in private clinical practice 8 were involved in roles as lecturers at an osteopathic educational institution
Education	All had undergraduate qualification in osteopathy (BSc, DO). 1 held an additional MD degree

B.Sc: Bachelor in Science; MD: Medical Doctor; D.O: Diploma in Osteopathy.

2.2. Data collection and analysis

A constructivist approach to GTM was used as a framework for data collection, analysis and conceptualisation [9]. This interpretative approach to GTM allowed the researchers to explore the individual clinical experiences and realities of osteopaths, and describe the complexities of the social processes involved in their clinical practice [55,56]. Data was collected via semi-structured interviews. A first interview guide was developed from the research literature. After the first 6 interviews, the interview guide was amended in order to explore and focus on developing themes and to capture in a greater detail, the different issues relevant to the research question (see Table 1).

Each interview was transcribed verbatim by the lead researcher, read and re-read several times to obtain a general impression of participants' perceptions, and later coded through a line by line process [9] conducted only by the principal investigator (A.F.). Data analysis occurred currently with data collection to allow for a process of constant comparison of the interview data and re-focusing of the interview guide to further explore areas of interest to the research aims. Groups of statements were brought together and categorised using the advanced coding strategies of open (see Table 3), axial and selective coding (see Table 4) [70]. Throughout data analysis, the developing findings were critically discussed with the other two researchers, who were both osteopaths and had experience in conducting qualitative research (J.E and O.T.).

Data collection and recruitment of the final study sample (11) was determined according to the concept of theoretical saturation [35], meaning that data collection and analysis occurred until no new themes or insights developed from analysis.

2.3. Trustworthiness

Trustworthiness of the study [73] and subsequent findings was supported through several strategies built into the project. Member checking with participants was used to implement and validate the transcribed interviews [3]. Participants were sent a transcript and invited to check, comment and edit it, as appropriate. Then, the transcript was returned to the researcher (A.F) for coding. No

Table 3
Example of line by line coding.

Quotes	Codes
P3: "I look for to see always the <u>"structurality of the things"</u> and I see if exists something related to <u>biological nature of pain (arthrosis)</u> in that patient. Also because I <u>have not the competence</u> to evaluate and manage other contexts. My management is aimed to locate the <u>biological element</u> ".	Structure based beliefs Focus on diagnostic categories and label Lack of competence Biological entity

Participants' words and phrases which informed the initial codes are underlined.

Table 4
Example of selective and axial coding.

Selective coding	Axial coding
Somatic oriented beliefs	Focus on impairments MS movements (postural mal alignment) P2, P4, P11 Structural causation and tissue based approach P2, P4, P10 Body framework approach (restrictions or abnormality in patient tissues) P1, P2, P7, Focus on hands on evaluations, mobilization tissues approach P1, P4, P10 Biomechanical principles P3,P5

participants added comments or made amendments. Rich descriptions of the findings reported in this study have contributed to the process of transferability, facilitating the interpretation of these results in the context of the reader's clinical practice. A peer debriefing strategy [9] was used to enhance the credibility of the findings, in particular to discuss the findings with osteopathic colleagues not involved in the study. For verification purposes, an audit trail was prepared to address the dependability and confirmability of this study, especially providing a summary of each transcript that included the context, main themes, impressions and exemplary quotations, and compared with the memos written during the interview by the main investigator (A.F.).

3. Results

Data analysis resulted in the construction of three major themes which captured the range of views and beliefs that participants held in relation to the BPS model and how they evaluated, treated and managed patients with chronic MSK pain. These themes are discussed in turn, with supporting quotations from participants. The main three themes (Fig. 1) are:

- process of patient evaluation
- professional view
- developing professional knowledge

3.1. Theme 1: the process of patient evaluation

In general, participants revealed a biomedical orientation in their chronic pain beliefs, especially in terms of a biological entity of pain and dominant tissue aetiology that validate the chronic pain experience. Some participants (P1, P4, P7, P10) had beliefs which emphasised a predominantly physical-structural approach to patient evaluation. These beliefs, which emphasised body structure appeared to be based on biomechanical theories and perceptions centring on tissue mechanics, which led these participants to adopt a hands-on evaluation approach, where their technical manual skills predominated the clinical assessment.

I try always to identify the 'structurality of the things' and verify if there is something related to biological nature of pain (e.g. arthrosis) in that patient. Because I have no competence to evaluate and manage other contexts. (P3)

After the recognition of biological damage, the next step is to understand the patient's functional schema that could hide the problem, considering the holistic vision of the NMS system (the column as an organ), including somatic and visceral-somatic reflexes. (P2)

Among the participants there was general acceptance of the importance to consider the psychological and social (PS) factors in their process of patient evaluation. However, although some participants (P2, P4, P6, P7) recognised the potential importance of the PS factors, such as "yellow flag" as barriers to patients' clinical improvement, they did not always incorporate these into their clinical reasoning and decision making. When participants did consider incorporating PS factors in their patient evaluation, this was often in an informal serendipitous way, based on intuition from personal experiences, rather than a more systematic strategy to screen for and identify PS factors so that they could develop an understanding of complex issues which would inform ongoing patient care.

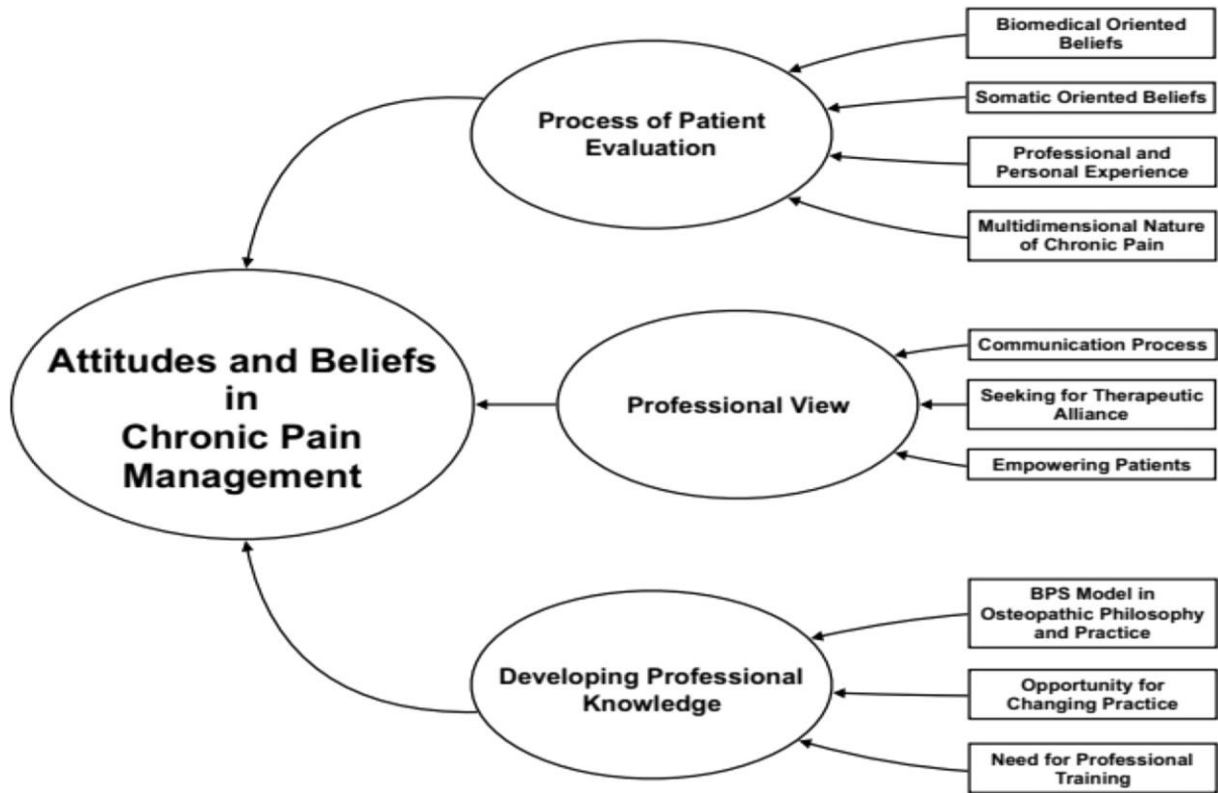


Fig. 1. Conceptual Map of participants' beliefs and behaviours in their management of patients with chronic pain.

If what I feel or sense [during the case history] is related to the patient's problem I immediately explain to the patient what I think. If there is no correlation, I try to understand if there are other factors beyond the physical problem, which may be family or work-related. (P4)

During my interview I usually do not deal with these [psycho-social] aspects, I prefer to avoid and wait for, when the patient's confidence is improving, I try to deal with the PS factors in that patient. (P5)

I believe that osteopaths are aware of the existence and integration of the psycho components in chronic pain, but in many cases these factors are underestimated by them [and] we manage these problems according to our experience. (P6)

For most participants PS factors were considered as having a secondary role compared to biomedically oriented structural-tissue-postural factors. However, some participants expressed a lack of confidence in managing PS factors, and uncertainty regarding their professional role and scope of practice, for example:

My osteopathic education was based on biomechanical-tissue model, that is my reference model, even because it represents what I know better and what makes me more confident and assured. (P7).

3.2. Theme 2: professional view in managing chronic pain

The second theme concerned the set of values and beliefs, mainly related to the professional's actions, that guided the

processes of managing patients experiencing chronic pain. Participants reported the importance of the communication process in approaching these challenging patients. They expressed beliefs about the important role of communication as a relational tool in providing appropriate and accurate information, and to reassure and empathise with the patient.

Chronic patients need to be reassured, especially for any possible misunderstandings generated by a non-recognition of the causes of chronic pain. The skill to reassure and keep patients calm is very important, and represents also a starting point in the management of chronic patients, especially if they are anxious or depressed. (P9)

Although participants recognised the importance of clear verbal communication, they also emphasised the role that nonverbal communication plays in the clinical management of patients with chronic pain. For example, for some participants therapeutic touch, palpation of the body tissues, talking and listening were highlighted as important tools to develop a rich understanding of the patient, their illness experience and the wider social factors related to their pain. These non-verbal communication strategies enabled the development of an effective therapeutic relationship.

We osteopaths are very different from the allopathic doctor; we establish with the patients a more superior verbal relationship. We have a verbal and nonverbal conversation with the patients, especially through the touch and correct use of the words. The communication and the words have to be weighed and carefully evaluated. (P8)

The quality of interpersonal relationship together with the relational factors were also considered to influence and facilitate

the process of information exchange, by managing uncertainties and enabling the patient to have an active role in self-management and negotiations. Furthermore, trust was a critical component in order to favour an effective therapeutic alliance.

I think that the therapeutic relationship is fundamental when I approach chronic patients. In any case, there are a lot of jobs to do, especially while searching to share outcomes with patients ... [and] I have a high chance in the management of the patients and their expectations, especially in the pain control and function. (P1)

The patient's active role is essential, because they are the main actors of this therapeutic relationship. I can help them with my treatments, but they are living in pain, and it is a partnership that we have. 'You do your bit and I do my bit and together we will aim to get you right'. (P10)

3.3. Theme 3: developing professional knowledge

Participants looked to the BPS model as a practice framework and sought to embed it into their practice knowledge. Almost all participants recognised and acknowledged the importance of the cognitive, emotional and behavioural aspects of chronic pain, and even how they could influence the patient's lived-experience of pain. They considered the BPS model as an important tool, inherent and in accordance with osteopathic philosophy and practice.

I believe that this [BPS] model is applicable to chronic patients, it has an important significance in osteopathic practice. (P1)

However, participants agreed that they felt there was insufficient guidance or clarity in how to practically incorporate the BPS model their current practice as osteopaths. The main reason for this appeared to be due to a perceived deficit in their knowledge and skills to implement the BPS in a purposeful way. In fact, they felt under-prepared in identifying, considering and managing psychosocial aspects of chronic pain patients.

I thought on this concept (BPS) just when I was invited to take part in this interview. I have a little knowledge of this [BPS] model. I have no competence to evaluate other patient's context. Of course I think that such factors are important in the presentation but I do not have the confidence to manage these situations. (P3)

Participants consistently expressed that their professional training had not equipped them with the necessary skills to explore and incorporate these factors within their clinical practice. They stressed the opportunity for changing their paradigmatic system of practice but, at the same time, they recognised the challenges in shifting paradigms and applying this model.

My undergraduate training paid little attention to this [BPS] model. I feel more comfortable to manage biomechanical and postural aspects of the patient's pain. I think that BPS model is valid with respect to the chronic pain management, but I have no competence and knowledge to apply this model in my practice. (P7)

In this regard, participants felt strongly for the need to introduce formal educational training to facilitate the integration of the BPS model in their osteopathic clinical practice.

I think we need to improve our knowledge within the profession ... we need to update our knowledge is important to better improve our approach with chronic sufferers. We have to take into account

also the lack of training in pain management and communication inside the undergraduate curricula in Italy. In fact, some aspects are poorly covered and under explored. (P11)

4. Discussion

This study explored the views, beliefs and attitudes of a group of Italian osteopaths in relation to their understanding and application of the BPS model with patients experiencing chronic pain. The range of views and beliefs expressed by participants are largely consistent with other similar qualitative research in integrating the BPS model in pain management [63,80], and the importance of changing clinical practice behaviours in managing patients with chronic musculoskeletal pain [82].

The findings from this study highlight that the beliefs and attitudes of osteopaths in relation to the treatment of patients with chronic pain are primarily structural-pathology based and as such their approach to practice is consistent with a biomedical model, as described elsewhere [43,48]. These beliefs centred on a biomedical-tissue oriented view of musculoskeletal pain, and concur with qualitative studies in other fields of manual therapy [13,19,65,89], which demonstrate that practitioners' beliefs and attitudes regarding the evaluation and management of chronic pain are biomechanically oriented and take precedent to psychosocial factors known to be important in the genesis of and recovery from chronic musculoskeletal pain [15].

The findings reported here support the notion that osteopaths recognise the need to deal with the psychosocial aspects in chronic patients, although with variable competence. In fact, several participants who were experienced in practice, expressed clear views in relation to how psychosocial aspects may influence chronic pain conditions.

Despite this, the study reveals that the biomedical and psychosocial factors are often considered separately, rather than being part of the same clinical picture, as reported in Smart and Doody's [68] qualitative study of UK physiotherapists' clinical reasoning that found practitioners felt confident and competent in dealing with physical problems rather than psychosocial ones. In contrast, in this present study, while participants attempted to integrate the physical and psychosocial factors into their practice, often the physical entities took priority. However, the qualitative data generated seem to reflect the growing consensus that psychosocial factors are recognised as being more important than the physical factors, as prognostic indicators for predicting outcomes and the risk of developing chronic pain, such as distress [77], depressive mood and emotions [57], cognitive function [4] and coping style [42].

The complex interaction of social and psychosocial issues in chronic patients was clearly perceived by the osteopaths in this study as a way of offering an holistic view of the patient's chronic pain experience. However, the finding that osteopaths perceived they lacked the necessary skills to effectively identify and respond to contributing PS factors in pain management approach is consistent with research from physiotherapy [65,66,89]. Despite these difficulties, the osteopaths in this study appeared to recognise the importance of engaging patients with chronic pain in the process of their care in terms of sharing decision-making in treatment and management plans. This is in line with recent work in physiotherapy [86]. Advice and education appeared to be a common reported strategies employed by participants in managing and facilitating changes in patients' attitude. Furthermore, patient empowerment was central to maintain a productive therapeutic alliance, as previously reported by Aujoulat et al. [2] and in Ref. [36]. Effective verbal and nonverbal communication process seems to be also an integral

component to the practice of this sample of Italian osteopaths, particularly to build a strong partnership with their patients experiencing chronic pain. In contrast, the complex, challenging and variable nature of chronic pain conditions, together with the limited time of treatments, highlighted the negative feeling among osteopaths related to an uncertain management orientation while treating chronic pain sufferers, as found by Slade et al. [67]. However, while there were positive beliefs in considering the BPS model to be inherent to the osteopathic philosophy, some osteopaths expressed challenges to operationalise the BPS model, and fully integrate the physical and psychosocial elements into their patient care.

In general, osteopaths included in this study struggled with the integration and adoption of the BPS model in their practice. Their behaviours are consistent with those reported by Harding et al. [33] and van Dijk-der Vries et al. [80], showing that the consideration and integration of this model into clinical practice requires more defined considerations and skills to manage the psychosocial elements in patients with long term pain. As outlined by Foster [27] the main barriers to the application of the BPS model are related to the sense of underdeveloped competence to effectively apply it to clinicians' professional practice, which stem from lack of appropriate knowledge, professional competence, the lack of opportunities to reinforce approaches in clinical education and clear professional clinical guidelines.

Concerning our findings, the opportunity to consolidate this knowledge into the clinical practice requires a paradigm shift from a biomedical-tissue dimension to a more integrated approach. All participants expressed the need to receive specific training in order to 'up-skill' so that they are able to successfully implement a BPS approach, as reported in the physiotherapy field [65,89]. This may involve providing practitioners with clear guidance on how to balance the patient's psychosocial problems and the biomechanical approach in daily clinical practice, and the development of specific strategies of implementation in their clinical behaviours. This is consistent with the need to expand the scope of osteopathic practice towards a more embedded and embodied clinical reasoning process [26,38], considering patients' beliefs [81], pain control strategies, pain neuroscience education [50] and expand the adoption of multidisciplinary care [37].

4.1. Implications for osteopathy

This study may have implications to both osteopathic educators and practitioners. The findings may encourage those involved in the development, implementation and evaluation of osteopathic educational programmes to enhance competencies in the field of pain science. In particular, to plan and implement pre-registration and post-qualifying educational programmes that can meaningfully impact students' knowledge, attitudes and skills, essential to address the complexity of contributing and risk factors that influence the experience and expression of a patient in chronic pain [12,62].

Through critical self-reflection on biomechanical theories and models which are thought to be central to an osteopathic approach, [39,40], practitioners should appraise the value and plausibility of their dominant approaches and practice paradigms that guide their clinical work as well as to better reconceptualise and expand the rationale of the therapeutic effects of the osteopathic manipulative treatment (OMT) in patients with musculoskeletal related chronic pain [29,60]. This would enable the development of more person-centered framework, that may help osteopaths to enhance their confidence and competence in the identification of obstacles to healing, outside the "joint" [30,47]. Moreover, critical reflection may also assist osteopaths in their attempts to better understand the nature of patients with long term pain, adopting and

consolidating non-physical based "soft skills", especially when looking to facilitate empowerment and self-efficacy of individuals in this challenging and complex patient group. These strategies include the ability to understand the way patients cope with chronic pain [42], self-management skills [51], address patients' pain beliefs and pain education skills [45], reassuring role [59], and clinical communication, such as positive reinforcement in terms of the language used with patients [74].

4.2. Limitations of the study

There are several limitations of this study which require attention. Chronic pain is a term that covers a wide range of disorders; this means that the understanding of pain may change depending on aetiologies, conditions and treatments. Moreover, the findings from this small qualitative study cannot be generalised to represent the views of all the osteopaths practising in Italy. In fact, the opinion of a small group can never represent the "truth", and further research is required to explore the transferability of the findings, especially to explore how they may relate to osteopaths from other clinical setting and contexts (e.g. paediatric practice).

5. Conclusion

This qualitative study describes the need for Italian osteopaths to incorporate a well-defined biopsychosocial model in their evaluation, treatment and management of chronic pain sufferers, and the challenges in doing so. Data analysed from this purposive sample suggests that there is a considerable need amongst osteopaths for a paradigm shift in their practice, one that considers psychosocial factors as core skills. Beside the importance to consider and incorporate the BPS model in their professional practice, the study highlights the need for Italian osteopaths to pursue further professional education and development in pain management, if they wish to acquire a more operational holistic view of suffering patients and to be better equipped to help chronic pain sufferers.

Ethical approval

The study was granted ethical approval from the University College of Osteopathy's Research Ethics Committee.

Conflicts of interest

OT and JE are associate editors for the International Journal of Osteopathic Medicine, but were not involved in any peer-review or editorial decisions in relation to this paper.

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Appendix A

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Inter viewer/facilitator	Which author/s conducted the inter view or focus group?	The first author.
2. Credentials	What were the researcher's credentials?E.g. PhD, MD	B.Sc. Pg Cert Edu
3. Occupation	What was their occupation at the time of the study?	Self employed osteopath and involved in educational field
4. Gender	Was the researcher male or female?	Male
5. Experience and training	What experience or training did the researcher have?	He has been an osteopath for 15 years and involved in osteopathic curricula development.
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	Only for 2 participants.
7. Participant knowledge of their interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing theresearch	Reasons for doing the research
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g.Bias, assumptions,reasons and interests in the research topic	Interests in the research topic
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation andTheory	What methodological orientation was stated to underpin the study?e.g. grounded theory,discourse analysis, ethnography, phenomenology, content analysis	Thematic analysis with elements of Grounded Theory
<i>Participant selection</i>		

10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive and snowball process.
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Email and telephone
12. Sample size	How many participants were in the study?	11
13. Non-participation	How many people refused to participate or dropped out? Reasons?	No one
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Workplace
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Experienced osteopaths
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Yes, semi structured interview. Not pilot tested
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audio recorded
20. Field notes	Were field notes made during and/or after the interview or focus group?	Yes, a memo notebook.
21. Duration	What was the duration of the interviews or focus group?	From 45 to 55 minutes
22. Data saturation	Was data saturation discussed?	Yes
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Yes
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	Only one coder
25. Description of the coding tree	Did authors provide a description of the coding tree?	Yes
26. Derivation of themes	Were themes identified in advance or derived from the data?	Derived from the data
27. Software	What software, if applicable, was used to manage the data?	No software used.
28. Participant checking	Did participants provide feedback on the findings?	Yes
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes

31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	No

Once you have completed this checklist, please save a copy and upload it as part of your submission. When requested to do so as part of the upload process, please select the file type: *Checklist*. You will NOT be able to proceed with submission unless the checklist has been uploaded. Please DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.