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Original article

Quiet dissent: The attitudes, beliefs and behaviours of UK osteopaths who reject low back pain guidance – A qualitative study

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ABSTRACT

Introduction: Clinical guidelines are derived from best research evidence and aim to: improve quality of non-specific low back pain (nsLBP) management and identify patients at risk of suffering chronic pain. However, guideline discordant attitudes and beliefs have been identified in healthcare students and practitioners, including osteopaths.

Design: A qualitative approach with elements of grounded theory was used to explore underlying attitudes and beliefs of practitioners/students working in a British osteopathic education institution. All participants rejected guideline recommendations for managing nsLBP. A constant comparative method was used to code and analyse emergent themes from transcript data.

Subjects: Purposive sampling identified 5 clinic tutors and 7 students; all participated in semi-structured interviews.

Interpretation: Our central theme was a 'Precedence of Osteopathy' over medicine and other manual therapies. Three subthemes were: 1) beliefs about self; 2) perceptions of others; 3) attitudes to guidelines and research.

Conclusion: Participants possess a strong professional identity fostered by their education. This bestows autonomy, authority and distinctness upon them. The central theme was modelled as a lens through which participants viewed research: the evidence pyramid appears inverted, explaining why participants value expert opinion above all other evidence. Guidelines and research are perceived to threaten professional identity. In contractual situations that oblige practitioners to follow guidelines management, perhaps reflecting a pragmatic response to health-care market forces, clinical practice is modified. Developing further understanding of osteopaths' attitudes and beliefs and behaviour in respect of evidence-based guidance in education is important to enhance the quality of clinical practice in osteopathy.

1. Introduction

The lifetime prevalence of low back pain (LBP) is estimated to be almost 40% (Hoy et al., 2012) with recurrence rates estimated at 54–90% (Hoy et al., 2010). Costs within the United Kingdom (UK) are estimated as £10,668 million (Maniadakis and Gray, 2000) and more recently, 1–2% of GDP (Foster, 2011). LBP generates the highest levels of global YLDs (years lived with disability), that increased from 5.82M YLDs to 83.0M YLDs between 1990 and 2010 (Hoy et al., 2014). In 1997, UK private healthcare costs related to LBP were £565 million; after inflation this equated to £768 million/annum in 2015 (ONS, 2016).

Despite its prevalence, Krismer and van Tulder (2007) note that 90% of LBP cases have no identifiable cause and are categorised as non-specific low back pain (nsLBP). By 2001, eleven countries had produced clinical guidelines for managing acute and chronic nsLBP (Koes et al., 2001); the UK published guidelines in 2009 (National Institute for Health and Care Excellence, 2009) and by 2010, a total of 13 countries, including two international (European) guidelines had been published (Koes et al., 2010). Guidelines adherence has been found to improve function, lower utilization of care, lead to fewer treatment sessions (Rutten et al., 2010) and may allow for early identifications of patients at risk of developing chronic disability and poor health outcomes (Grimshaw et al., 2004).

The General Osteopathic Council (GOsC) regulates UK osteopaths, half of whose workload is back pain related (National Council

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for Osteopathic Research, 2013). In 2016, of the 5100 GOsC registered osteopaths, 246 practice within the European Union and 304 further abroad (van Heerden, 2016). The current NICE guidelines recommend manual therapy for nsLBP and osteopaths are one of three statutorily regulated manual therapies. Osteopathic education is overseen by GOsC, whose published practice standard obliges osteopathic registrants to use the best available research and evidence to guide professional development and patient management (GOsC, 2012a). Consequently, UK osteopathic students and osteopathic clinical tutors should manage nsLBP in accordance with published guidelines.

Despite known benefits of following guidelines, health-care professionals may not adhere to these, effectively creating a policy-to-practice gap (Foster, 2011). Guideline inconsistent attitudes and beliefs have previously been identified in manual therapists (Pincus et al., 2007; Poitras et al., 2011), essentially acting as barriers to guideline adoption (Côté et al., 2009; Maue et al., 2004). Successful guideline adoption requires four steps: 1) awareness of published guidelines; 2) intellectual agreement with guidelines; 3) adoption of recommendations; 4) adherence to recommendations (Pathman et al., 1996). Influencing factors are variable and complex; practitioners may be unconvinced by underlying evidence (Corbett et al., 2009), and/or challenged by the guidance (Côté et al., 2009), or have a biomedical attitude (Darlow et al., 2012). Practitioners and students who reject guidelines, may influence patients to adopt maladaptive attitudes and behaviours towards activity and work (Bishop et al., 2008).

To date, there has been little investigation into osteopaths' and student osteopaths' attitudes and beliefs regarding LBP guidelines; one survey of osteopathic students found beliefs incompatible with European LBP guidelines (Stokoe and Rajendran, 2010). Since practitioners' attitudes and beliefs may contribute to the development of chronic nsLBP (Houben et al., 2005), we wanted to explore the underlying attitudes, beliefs of osteopathic clinic tutors and student within one OEI, who rejected guideline recommendations. As a secondary aim, we wanted to explore tutor attitudes to research and its influence on their practice.

2. Methods

2.1. Study design

We adopted an objectivist approach and chose an exploratory qualitative method that used elements of grounded theory: data collection with contemporaneous analysis, constant comparison of codes and note-making. A questionnaire identified tutors and students holding guideline discordant views and all were invited to participate in one-to-one interviews.

2.2. Ethics

Ethical approval was obtained from the Research Ethics Committee at the European School of Osteopathy.

2.3. Topic guide

The topic guide was subjected to peer-review by two independent people and subject to two pilot interviews; revisions from these processes ensured participants had the opportunity to fully present their views. Data from the pilot studies were incorporated into the analyses.

2.4. Participants and recruitment

A four-item questionnaire based on Pathman et al. (1996) 'Agreement-to-adherence' model was emailed to all tutors and clinical students. Responders were divided into five groups, and all within groups 4 and 5 were invited to participate (Fig. 1). Participants were informed they could withdraw at any time and their data would be deleted.

Following consent and enrolment, all participant data were anonymised. Semi-structured interviews were conducted: participants were encouraged to respond to questions and expand upon their views and opinions about the guidelines (Hicks, 2009). All interviews were conducted by JFL, a final year student on an Integrated Master's Degree (osteopathy) and educated in qualitative research methodology at the OEI where the study was conducted. JFL wished to explore the role and relevance of guidelines within her OEI and future profession; all the participants knew JFL prior to this study and were made aware of her reasons for selecting this topic. Further, JFL recognized that she related to student participant experiences more readily than tutors.

Interviews ended when data saturation occurred and the final number of interviews determined when no new viewpoints or beliefs were uncovered. Interviews were recorded (Olympus VN-3100PC, Japan) and transcribed verbatim (InDesign, Adobe, San Jose, 1992). Collaborative and personal reflection on the codes and emerging themes took place after each interview (JF and DR) ensuring rich data were gathered. No non-participants or assistants were present at any interview and repeat interviews were not carried out.

2.5. Analysis and rigour

Transcribed data were analysed using a constant comparative procedure in which units of data were coded and compared with other units of data within a category. This process originates in the data, evolves inductively to generate themes from which a theory emerges. The transcribed data were subject to four stages of analysis (Glaser and Strauss, 2012).

1) Descriptive codes were applied against sections of text.
2) Conceptual codes were assigned into sub-themes via an iterative process and a framework produced.
3) Sub-themes were compared and conflated into main themes and the framework updated.
4) A central theoretical concept was generated.

In order to establish validity of the emergent codes, a process of investigator triangulation was used on 25% of the transcribed data by three independent colleagues trained in qualitative methods. Reliability of the emergent codes was calculated and found to be 78% agreement. Please see Fig. 2 for a flow diagram of data gathering and coding process.

3. Findings

Over a three month period, a total of 106 out of 139 questionnaires (74%) were completed by 20 tutors and 86 students - see Table 1.

3.1. Participant characteristics

Overall, 52 participants were eligible for interview; 37 could not be interviewed because of time-table incompatibility. Although consent was obtained from fifteen individuals, two tutors and one student were later unable to attend due to timetable conflicts. The

Group	Awareness	Read	Agreement	Adoption	Adherence
1	NO	NO	NO	NO	NO
2	YES	YES	YES	YES	YES
3	YES	YES	YES	YES	NO
4‡	YES	NO	NO	NO	NO
5‡	YES	YES	NO	NO	NO

Fig. 1. Agreement to Adherence model (Pathman et al., 1996). ‡ Target group selected and invited to participate in interview session.

final number of participants interviewed was twelve; five tutors and seven students (two 4th year students) - see Table 2.

Participants chose whether interviews were held at the clinical or non-clinical site of the OEI. Individual interviews lasted between 30 and 65 min and altogether totalled 9.5 h. Transcripts were member checked and no corrections or comments received.

3.2. Emergent themes

We identified one central theme with three dependant themes that were derived from, and encompassed, 14 individual sub-themes emergent from these data. Illustrative quotes that are examples of participant's first order observations are numbered in Table 3 and appear in square brackets below.

3.2.1. Central theme: the precedence of osteopathy (over mainstream medicine and other manual therapies)

Tutors and students who did not agree with guidelines conveyed strong beliefs that osteopathy possesses a broader and more complex philosophy than other manual therapies [1.1] or mainstream medicine [1.2 & 1.3]. Osteopathy was revealed as being isolated from other manual therapists and mainstream health-care systems and should remain autonomous [1.4 & 1.5]. Some expressed that their holistic biomechanical view of the body, obtained from their training [1.6 & 1.7] precluded them from following guidelines, which were designed for lesser trained practitioners [1.8].

Similarly, medicine in general was viewed sceptically [1.9]; medical derived guidelines represented treatment boundaries and were rejected [1.10]. Due to financial and contractual constraints, osteopathy practised within UK National Health Service (NHS) contracts was acknowledged as being different from that in private practise [1.11]. Practising osteopathy within private setting was deemed preferable and thought to improve the 'placebo' effect by allowing patients to do 'something for themselves' [1.12].

3.2.2. Theme 2: beliefs about self

Participants disclosed that they are less connected to the healthcare system and had difficulty engaging with non-osteopathic practitioners [2.1]. They described a spectrum of osteopathic practitioners that reflected the diversity of osteopathic approaches [2.2], ranging from 'physiotherapy-like' approaches to 'left-field' [2.3] mystical practitioners [2.4] whose beliefs were akin to fundamentalist religion [2.5]. Patients reflected this spectrum, with the more esoteric requiring onward referral to similar osteopaths [2.6]. Research, while acknowledged as valid, was not believed to apply to osteopathy [2.7]. The diversity of osteopathic approaches to patients and their pain was viewed as a strength [2.8], possessed by virtue of a strong osteopathic tradition, but perceived as being diminished by 'mainstream' [2.9]. Students reported that their guideline adherence occurred 'indirectly', dependent upon the supervising tutor's adherence (or not) to guidelines [2.10].

3.2.3. Theme 3: perceptions of patients and other practitioners

Participants described how physiotherapists were 'closely woven' into mainstream culture [3.2] and thought that all NHS-aligned professions (doctors, nurses, physiotherapists *etc.*) were more guideline adherent [3.1]. Osteopathic principles enabled osteopaths to 'think outside the box', whereas guidelines recommended treating in a prescribed way [3.3]. Participants rejected guideline recommendations because their osteopathic findings determined their treatment [3.4]. Limiting treatment sessions for nsLBP was specifically deemed not applicable for osteopathy, which had 'preventative value' in terms of patients' general health and musculoskeletal issues [3.5]. Both tutors and students did, however, question whether patient dependency was an issue of 'culture' within the OEI teaching clinic [3.6].

3.2.4. Theme 4: attitudes to research and clinical guidance

Guidelines were viewed by tutors as a line in the sand, gathering pertinent information together that reflected current understanding when published, but relevance and importance 'degrades' with time [4.1]. Predominantly, participants viewed research as 'skewed' [4.2], with guidelines potentially biased by 'vested interests' of parties involved in preparing and publishing them [4.3]. Reiteratively, the research upon which clinical guidelines are based reduced patients to statistics, dehumanizing them [4.4], and this was 'not good'. While research was thought useful for 'big populations', certain methodologies (*i.e.* double-blinded clinical trials) were inappropriate for osteopathy [4.5]; participants expressed that since the body is so complex, a reductionist model of research did not work [4.6]. Guideline adherence was described as a threat to osteopathy's classical and 'holistic' view of the body [4.7]. In the future, however, science and technology would prove what osteopaths already know about osteopathy [4.8], and this view justified continued use of techniques unsupported by current evidence [4.9].

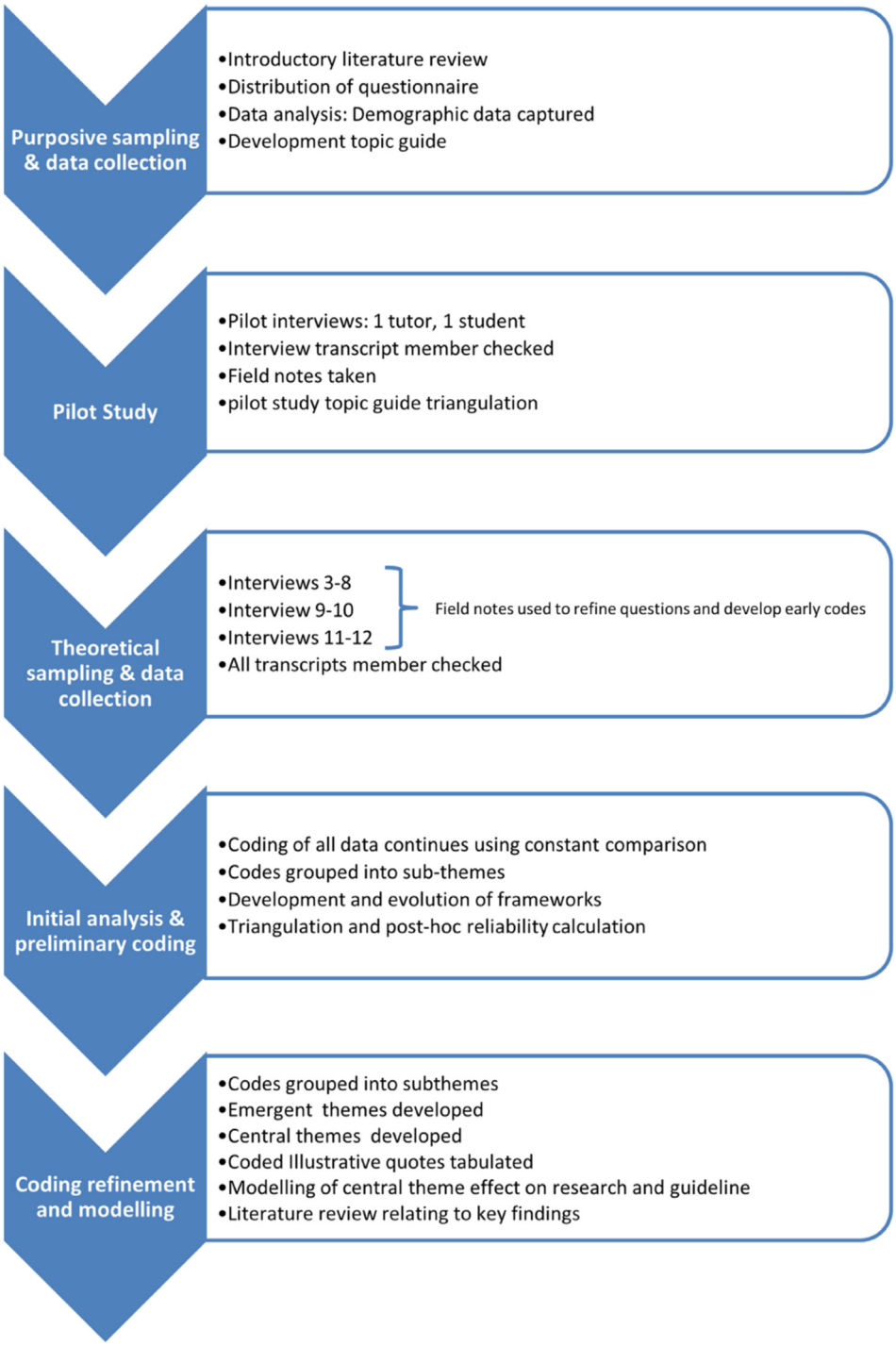

Fig. 2. Flow chart of data collection and analysis.

3.3. Thematic summary

The central theme driving this rejection of the guidelines on nsLBP was the 'Precedence of Osteopathy'. This pervaded and underpinned participants' professional self-identity, perceptions of other healthcare professionals and attitudes to both guidelines and research in general.

Participants' professional identity was of fundamental importance, and founded upon a perception that their philosophy is unique, complex and distinct from other therapies and mainstream medicine. Their philosophy was deemed superior to science, and thus should not be restricted by science in any way. This philosophy endowed them with creativity, intuition and insight; characteristics developed and nurtured by the nature of their osteopathic training and distinguished our participants from other healthcare practitioners, thus deserving of guideline autonomy.

3.4. Conceptual model with respect to guidelines

Our central theme, the 'Precedence of Osteopathy' (PoO) appeared to act as a cognitive lens through which participants viewed, judged and rejected the results from both the

Table 1
All group responses to invitation questionnaires on NICE and European Guidelines on LBP (n = 106).

Total n = 106[a]	Participants	Agree n (%)	Disagree n (%)	Unsure n (%)
UK NICE Guidelines	3rd year students	14 (27)	28 (56)	9 (17)
	4th year students	12 (35)	15 (38)	8 (27)
	Clinical Tutors	11 (55)	6 (30)	3 (15)
European Guidelines	3rd year students	10 (20)	37 (72)	4 (8)
	4th year students	4 (11)	15 (42)	15 (42)
	Clinical Tutors	2 (10)	7 (35)	11 (55)

[a] Total questionnaires distributed = 139. Total completed and returned = 106 (76% responded) comprising: 51 of 60 3rd year students (85% responded); 4th years = 35 of 49 4th year students (71% responded); 20 of 30 clinical tutors (66% responded).

Table 2
Participant identifier, demographics and estimated proportions of LBP pain presentations and usage of NSLPB diagnosis.

Participant	Gender	Age (years)	Status	Previous healthcare degree	Clinical setting	Estimated percentage of patients presenting with LBP	Estimated percentage of LBP patients diagnosed with nsLBP
A	Male	31–40	S 3rd	No	TC	30	10
B	Male	31–40	P	No	M(7)	50	5
C	Male	18–30	S 4th	No	TC	30	20
D	Female	41–50	S 3rd	No	TC	80	10
E	Male	41–50	S 3rd	Yes	TC	55	5
F	Male	41–50	P	No	M(5)	50	10
G	Male	50–61	P	Yes	S	60	20
H	Female	18–30	S 4th	No	TC	20	25
I	Male	41–50	P	No	M(3)/MD(4)	50	20
J	Male	18–30	S 3rd	No	TC	30	15
K	Female	18–30	S 3rd	No	TC	45	10
L	Male	41–50	P	No	SP	30	100

Key: nsLBP = non-specific low back pain; **LBP** = low back pain; **M** = multiple osteopathic practice (n = number of practitioners in practice); **MD** = multi-disciplinary practice (n = number of practitioners in practice); **P** = Practitioner; **S(n)** = Student (clinical year);**SP** = sole osteopathic practice; **TC** = Teaching clinic.

underpinning research evidence and guidelines. This 'lens' effectively inverted the view of the traditional evidence pyramid (Sackett et al., 1996) into an 'osteopathic evidence' pyramid (see Fig. 3) that augmented and elevated the value of personal experiences, anecdotes and the teachings of 'expert' osteopaths, whilst simultaneously diminishing and obscuring results from systematic reviews and meta-analyses that inform nsLBP guideline recommendations. Osteopathic expert opinions were revered and viewed as the highest quality osteopathic evidence. This is diametrically opposite to the traditional 'evidence pyramid' that ranks expert opinion as the lowest possible form of evidence.

4. Discussion

We synthesized data from semi-structured interviews of twelve participants identified as being aware of and choosing not to adhere to the UK NICE and/or European guidelines on nsLBP.

4.1. Professional identity

The central emergent theme, the Precedence of Osteopathy (PoO), was a belief that osteopathy possesses a broader and more complex philosophy than other disciplines, including other manual therapies, mainstream medicine and the scientific process. A belief in PoO empowered our participants to adopt their position of guideline dissent, underpinning their notion that expert osteopathic opinion and experience vastly outweighs research based evidence. They appear to espouse an 'eminence' rather than 'evidence' based medical model of practice (Isaacs and Fitzgerald, 1999), a model identified within clinical psychology that also results in guideline resistant practitioners (Lilienfeld et al., 2013).

Professional identity, education and clinical experience are known to be instrumental in shaping the participants' attitudes and beliefs (Pincus et al., 2007). Nonetheless, our tutors' with NHS contracts expediently delivered guideline compliant treatments. Similarly, students interacting with those tutors perceived to be evidence informed appeared able to modify their practice behaviour as needed.

Like many other professionals, our participants' strong sense of professional identity was based on underlying attitudes, beliefs, values, motives and experiences (Ibarra, 1999). The leitmotif of PoO, however, underpins a strong belief in the distinctness and autonomy of osteopathy. Similarly, following analysis of five years' worth of osteopaths' opinions expressed in public documents, Humpage (2011) uncovered a theme of 'uniqueness' defined by osteopathic philosophy and its autonomy from mainstream.

Concerns about the effect of guidelines adoption on professional identity is not new, and may also be found in health-care professions fully integrated within an established healthcare system. Introduction of evidence-based practice generated fears over losing professional autonomy and the art of practice amongst physiotherapists, midwives, nurses and social workers (Karin et al., 2009; Swinkels et al., 2002).

4.2. Perception of self and others

The PoO appears to engender a professional arrogance, with tutors and students expressing attitudes of superiority compared with other healthcare practitioners. Whilst surveying attitudes to nsLBP (Pincus et al., 2007), found that qualified osteopaths reported greater levels of self-confidence compared to physiotherapists and chiropractors. Using the same questionnaire, however, Stokoe and Rajendran (2010) found that osteopathic students reported a relative lack of self-confidence, speculating that confidence may develop once in practice. Both studies confirmed osteopaths and osteopathic students felt unconnected to the healthcare system.

Table 3
Table of quotes on grouped by themes.

Quote number	Participant	Theme 1 – (Central Theme): The precedence of osteopathy (over mainstream medicine and other manual therapies)
1.1	A	…it's [osteopathy] got a bigger sphere of theory… it has other models it brings in whereas physiotherapy is more biomechanical and musculoskeletal. Osteopathy likes to think it's a few more things than that.
1.2	H	in osteopathy philosophy plays a big part in it … we've got our own philosophy of how the body works… osteopathy is a much broader concept … therefore doesn't fit in very well with the way mainstream medicine is going at the moment, …
1.3	H	Well, yeah, I think we are in a good position to do that [communicate] because people go to doctors with low back pain and very often they just get a sick certificate and painkillers. Whereas, you know, we can re-educate them and that's partially because we have more time on our hands, we spend a lot more time with the patients, so we get more insight apart from the complaint why is it people not getting better…
1.4	I	I can speculate and say that osteopaths as a group can be quite isolationary, isolated from their peers [manual therapists] … Less connected to the health-care to the wider profession.
1.5	C	We are different to other practitioners and we don't have to be told what to do.
1.6	D	…we will look at everything, what is happening in the big toe to see what's happening in the cervical spine and not just that's where it's hurting.
1.7	F	the tissue causing pain', this is the argument at the moment isn't, how important is that? … my thoughts are really, what am I finding posturally or biomechanically wrong that can have an effect on that tissue? … so I'm not really in the non-specific low back pain camp or the tissue causing pain camp. I like to find the anatomy that caused it, so I think I'm somewhere in the middle.
1.8	D	…because as osteopaths we should not be restricted in what treatment you can give.
1.9	L	Because osteopaths come from a background which is highly sceptical of anything modern or umm clinical and deliberately set themselves up to be against that philosophically and it's almost trendy to be philosophically against modern health care practices. So if you do do it you're umm not an osteopath. That's why I think we do it we fight it.
1.10	D	I think osteopaths should give what treatment is needed not what we are told to do.
1.11	L	Not at the moment but I'm planning on doing that [NHS contract]. Then when I do that I will be totally doing that [following guidelines], because, they will be totally relevant, because they will only pay me for nine treatments.
1.12	J	I think because we are outside the NHS and we're private it has that placebo effect on the patient because they think they are doing something for themselves I think that has could be argued it has more of an effect than the treatment, which it reduces.
Quote number	Participant	Theme 2 – Beliefs about self
2.1	I	They [osteopaths] have great difficulty in engaging with other health care professionals in a way that is understandable that doesn't just make them seem weird.
2.2	C	…. there is more variation in osteopaths in the way they practice in general.
2.3	A	… within osteopathy if you can take a complete sample of all osteopaths you've got within osteopathy, some are much more like physiotherapists and chiropractors and you've got some of those osteopaths, out of left-field …
2.4	F	Problem with osteopathy is it's got that sort of mystical view hasn't it? And that's what people have done over the years, they've kept it all a bit mystical.
2.5	L	Oh! I think historically some osteopaths… have this lovely belief osteopathy is a pure almost religious thing and I don't think it is. It is almost a religion to some people rather than a form of treatment. … but I think some osteopaths take it too far and turn it into a religion where A. T. Still is the new Jesus Christ …
2.6	L	I give an example if they are interested in auras or energies and stuff I don't treat them who was referred but another osteopath bizarrely and he said 'Did I use modern paints in my clinic?' and before they this person came 'would I turn off my internet?' because the internet ethers disturb their treatment and I said 'yes I use modern paint and I won't turn off my internet' and he came anyway and then I referred him onto another osteopath … !
2.7	K	So I don't really, know but I completely see why its applicable or valid. I just don't have faith that the way research is done is the best way to apply to osteopathy.
2.8	A	As long as there is recognition that there's diversity in approaches to pain and there's recognition that there's such a lot of variation within osteopaths and within patients that there's no accounting for an individual reaction and what's going to work
2.9	H	I think osteopathy has already compromised itself a lot by trying to fit into, well, into the way mainstream is going … We've gone from an ideal that Andrew Taylor Still started with
2.10	D	… but depending what tutors you have we might be following a guideline a tutor might have read. So indirectly maybe I'm being taught that way.
Quote number	Participant	Theme 3 – Perceptions of patients and other practitioners
3.1	A	With physiotherapists I would guess that it's [guideline adherence] partly because they are more closely woven with, um, mainstream NHS medicine more than osteopaths or chiropractors are, so are doctors.
3.2	A	With physiotherapists I would guess that it's partly because they are more closely woven with, um, … but its a cultural thing its the world they work in and also I think compared with chiropractors and osteopaths and definitely osteopaths.
3.3	J	I don't agree with it. You can't … put principles into laws I think all patients are very unique and you can't say you would treat someone with a set condition in the same way because not all of them will respond in that way, sometimes you have to think outside the box.
3.4	A	You can't treat with algorithms, you've got to see what you find and then treat by what you find …
3.5	A	See, I don't subscribe to this idea that we are like car mechanics that something goes wrong and we fix it. I think … that if osteopathy works then one has to accept that and it has preventative value in people's general health state, both in systemic health and musculo-skeletal stuff. So, for me it's not an issue for me like that. Like they come to me in pain, I fix that pain and fuck off now, … it's not for me to judge whether their state be it one of, of straight forward biomechanical physical pain, be it an existential crisis, whatever their reasons for coming to see me. I think it would be arrogant to put yourself in a position where you can judge someone's internal world it would be difficult.
3.6	K	And at the same time still feel like I am getting criticism by tutors for that, why do you let them keep coming in? It's a difficult one, it's the culture of the clinic.

Table 3 (*continued*)

Quote number	Participant	Theme 4 – Attitudes to research and clinical guidance
4.1	B	I think, you know, what we have to recognize with the guidelines is they are almost a line in the sand, at that point in time they were pertinent to when they were written and with every subsequent year that passes their relevance and importance degrades.
4.2	D	We always know research can be skewed, so no, knowledge from my tutors has influenced what I've done. So I take account of … my tutors have seen this over many years and from their clinical experience…
4.3	G	Some of the criticism that's levelled at the guidelines by other factions is that there were too many vested interests in the preparation of them and that's swayed the tone of the guidelines
4.4	C	I think that study based evidence, um, seems very statistical, um, so its good for applying to big populations. Like its this percentage and this probability … but it's not good enough to treat a patient as a statistic.
4.5	K	So, I think there is an in built flaw in doing that … maybe there is another way to do research, you know clinical trials, double-blind which is considered to be the best way of researching. I just don't think it is applicable to osteopathy…
4.6	H	… well the facts are based on everything that osteopathy doesn't base itself on, like repeatability for every person, whereas osteopathy doesn't think that repeatability is something that you should apply to the human body, that they body is so complex, that is too simple and that doesn't work, again, the reductionist model doesn't work I think.
4.7	E	But it [guidelines] should not compromise the space, the room for a possibility of a more holistic view of the body, a broad development of a view of the human body and the ideas that were formulated in the beginning of osteopathy.
4.8	H	… because of increasing technology is that curve is going to keep going up we are going to get to a point where we can prove what osteopathy can do.
4.9	J	…if research isn't there it doesn't mean you shouldn't use it. For example cranial is, doesn't have enough research behind it but that doesn't mean it isn't an effective technique and you shouldn't dismiss it because there isn't research for it at the moment, because surely in time that will come.

4.3. Conception of practice

Our tutors and students view their clinical practice as individual, creative, intuitive and diverse; concerned with the individual, not the condition. These views, however, appear wedded to a strong biomedical view of the patient's body and their low back pain, a characteristic identified in technical rationalism and related to a paternalistic style of patient management (Thomson et al., 2014). We also identified paternalism within our data, which is at odds with our participants' belief that they are 'holistic' and resonate with the 'biopsychosocial' model adopted by mainstream medicine (Penney, 2009).

Our participants believe that one of their defining characteristics is creativity; a belief that their art of medicine is the opposite of science (Malterud, 2001). Curiously, evidence-based medicine also demands creative skill and expertise to balance the different types of information and tailor these to the needs and expectation of individual patients (Bronfort et al., 2010). The motive and scope of evidence-based medicine, nonetheless, is often misconstrued: clinical practice was never supposed to be guided by the results of a limited number of random control trials, and evidence-based medicine was never intended to regulate clinicians (Mootz, 2005).

4.4. Evidence based guidance in clinical education

The content and nature of undergraduate manual therapy training shapes guidelines attitudes; over-emphasis on a biomedical model of LBP is significantly related to non-adherence to guidelines (Hendrick et al.). Depending on the style of undergraduate training behaviours are modifiable to become consistent with

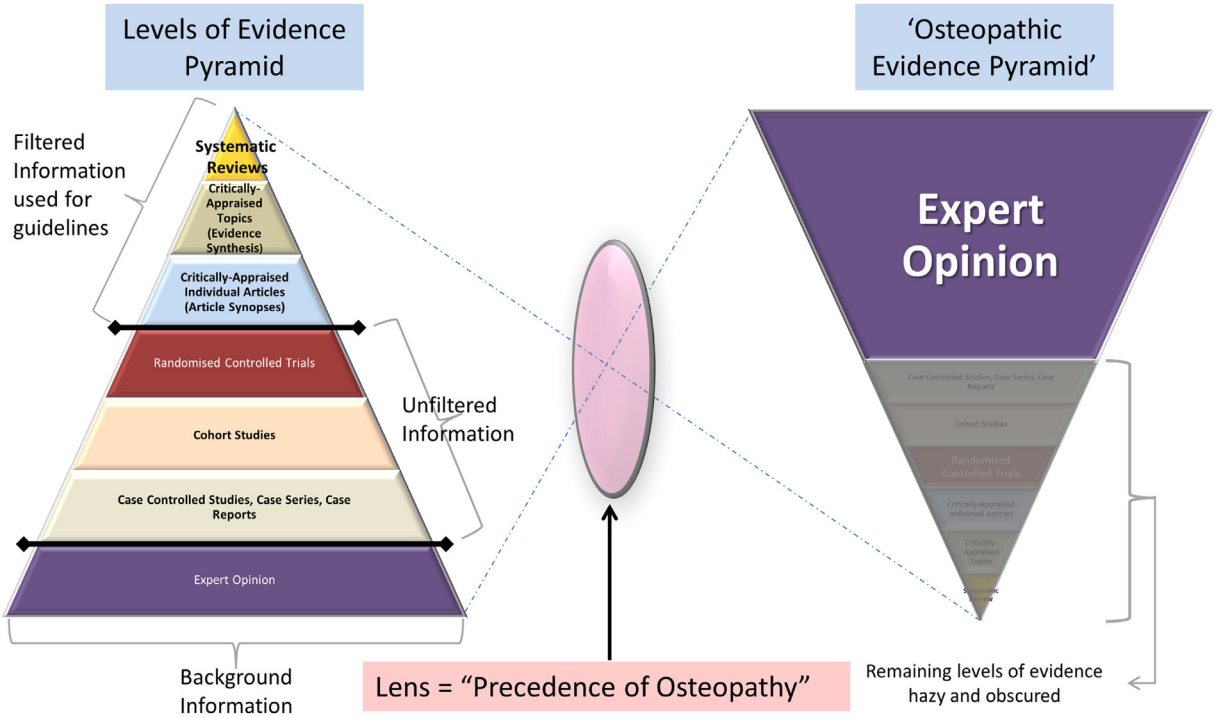

Fig. 3. Conceptual model showing the effect of looking at research through the 'lens' of our central theme, 'The Precedence of Osteopathy' This belief underpins our participant's professional identity and influences their professional viewpoint causing research evidence other than expert opinion to appear obscure and dim.

guidance and benefit the patient with LBP (Domenech et al., 2011; Ryan et al., 2010). Attitudinal shift requires intensive education and feedback (Schectman et al., 2003) but any shift in student attitude does increase the likelihood of adhering to guidance once qualified (Morris et al., 2012). Where students do hold guideline-discordant attitudes and beliefs, educational strategies and curricular content should be reviewed (Mikhail et al., 2005; Morris et al., 2012). Cross-discipline curricular alignment is recommended to ensure consistency of beliefs and behaviours between health-care professionals who deal with nsLBP, (Briggs et al., 2013).

Altering a practitioner's established beliefs and behaviour towards guidelines is more challenging. The influence of simply providing guideline educational materials is equivocal; Evans et al. (2010) only noted a small shift in practitioner's LBP related beliefs and self-reported behaviours, and Ostelo et al. (2010) found no changes. Even Schectman et al. (2003) acknowledge that their intensive protocol of interactive guidelines education resulted in behavioural shifts in only 5.4% of the intervention group. Nonetheless, in view of the abundance of high quality evidence surrounding nsLBP management, it remains unreasonable not to incorporate this into osteopathic education and practice (Penney, 2009).

Participants in this study appeared affronted by the nature of research, believing studies conducted on groups of patients fail to recognize the uniqueness of the individual and thus invalid. This misunderstanding infers that the laws of probability do not apply on an individual level (Ross and Ward, 1996). An obvious question stemming from this would be: if it was found through research that intervention X produced positive changes in 80% of the population and intervention Y produced positive changes in 40% of the population, which intervention should an individual patient choose to have the best chance of a positive improvement? Clearly intervention X should be chosen. Nonetheless, objections about using the pharmacologically derived methods such as the randomised controlled trials for complex interventions such as manual therapy does warrant further debate (Walach et al., 2006). Leach (2008) implies that if more weight were given to practice experience (*i.e.* clinical observation case studies and patient's views), the evidence-informed model might become more acceptable to osteopaths. Practice-based research methods, however, do require access to large patient numbers (Horn et al., 2011).

Fostering critical thinking and encouraging students to challenge accepted wisdom is essential in implementing evidence informed medicine within osteopathy (Fryer, 2008), a view reiterated by Lilienfeld et al. (2013) who advocate a rationale based approach to education as a counterpoint to eminence-based practice. Students should have the opportunity to experiment with evidence informed practice and feel able to challenge practice that is at odds with an educator's beliefs. The consequence of shifting educational approaches would facilitate student alignment with current statutory requirements to provide appropriate information to patients for shared decision making and gaining valid informed consent (Leach et al., 2014).

Ideological differences and a polarity, however, remain between evidence informed practitioners and PoO practitioners (Kasiri-Martino and Bright, 2016). This tension is encapsulated in the osteopathic standards of practice that require a clinician to address both evidence informed practice and use osteopathic principles in their patient management (GOsC, 2012b).

Evidence-based medicine has been described as three-legged stool, with the each leg representing: 1) best available research, 2) clinical judgement 3) patient values and preferences. This model was intended to bridge the gap between research and practice (Spring 2007). From this perspective, we can summarize that our participants appear to reject two of these legs: best evidence is replaced with expert opinion and patient preference is wrapped up in a paternalist style of practice. The absence of patient-centeredness, a so-called defining feature unique to osteopathy, appears eschewed (Thomson et al., 2013). Our participants effectively base their practice on one leg, basing their clinical judgment upon beliefs and principles that predate the evidence surrounding current management of nsLBP.

4.5. Limitations and strengths of this research

The main limitations of this study are that all participants were drawn from one OEI and that we deliberately distilled and focused on those data that explored those beliefs and attitudes seen to directly underpin guideline rejection. We also noted a gender skew amongst the tutors and unequal numbers of third and final year clinical students in our participants. Strengths include: topic guide validity checks and piloting; transcript member checking; achievement of within- and between-interview data saturation; triangulation and independent reliability checking of thematic coding.

4.6. Proposals for future study

The implications of this study are important for students, practitioners and educators in osteopathy. It identifies the role and influence of professional identity on clinical practice for nsLBP and seeks to provide insight for students early in their careers to recognize and critically appraise the complexity of factors underpinning education and influencing clinical decision making and how these shape and guide their osteopathic practice.

It is not known whether the ideology of individual OEIs, teachers and tutors impact on student attitudes to other guidelines on musculoskeletal conditions. Understanding how a student's professional identity and COP evolve would help identify potential barriers to integrating evidence-informed practice into undergraduate clinical behaviours. This knowledge may have implications for future academic and clinical curriculum development, staff development and even staff recruitment. It would also support GOsC requirements to practice in an evidence informed manner.

5. Conclusion

This study identified that these participants at one OEI possess a strong sense of professional identity and an unshaking belief in the precedence of osteopathy and that practice is informed by their osteopathic principles. Our findings provide an explanation for our participants' explicit rejection of published guidelines for nsLBP and why they value ‘expert’ opinion above all other forms of evidence, including results from research in general. Our participants were implicitly following a paternalistic practice style.

It is apparent the uptake of evidence-based medicine teaching is erratic. Where supported in a clinical environment, indirect guideline education influences students. A novel finding of this research is that while tutors are treating NHS patients, they modify their behaviour and adhere to nsLBP guidelines. Whether NHS osteopathic treatment differs, and whether participants believe they are compromising their philosophy and beliefs for these patients remain unknown. Similarly, we do not know whether treatment based upon a belief in the PoO are either perceived or valued by patient, and what effect this has on patient outcome and satisfaction.

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