

2020 Osteopathic Regulation Survey:

Report to The General Osteopathic Council

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General
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Executive summary

Researchers from Warwick Business School collaborated with the General Osteopathic Council (GOsC) to conduct an online survey of UK osteopaths' views and experiences of osteopathic regulation, which ran in early 2020 and followed up on a similar survey in 2014. In total 612 osteopaths (approximately 12% of those on the GOsC register) completed the 2020 survey.

Theory about 'responsive regulation' (Ayres and Braithwaite, 1992) framed the research. This theory suggests that through engagement with regulatees, explanation of why regulations and compliance are sensible, and improving regulations in response to feedback, regulators can persuade most regulatees to comply. However, a minority will only comply with regulations if they fear punishment for non-compliance. Regulators therefore also need to engage with their regulatees to evaluate levels of compliance and rebalance use of persuasion and punishment to maximise compliance.

Drawing on responsive regulation theory, we developed a model showing persuasion- and punishment-based pathways to compliance in our 2014 research. Our analysis of 2014 survey data identified five factors (sets of questions that respondents answered in a similar way, indicating a single construct) that we labelled: *Pro-regulator*, *Pro-evidence-based practice*, *Understanding regulations*, *Inappropriate regulations* and *Fear-based compliance*. Our analysis found a high correlation between being *Pro-regulator*, *Pro-evidence-based practice*, *Understanding regulations* and *Compliance*, reflecting the persuasion-based pathway. As predicted, *Pro-regulator* was negatively associated with *Fear-based compliance*. Yet, contrary to theoretically-based expectations, we found no significant association between *Fear-based compliance* and *Compliance*.

We developed, strengthened and tested this model using new questions and data from our 2020 survey, particularly developing a stronger factor for *Compliance* using responses to five related questions. We also drew on data from new questions about emotional responses to regulation, from which we created new factors for feeling *anger about regulation* and *anxiety about regulation*. These new factors for compliance, anger and anxiety about regulation can be used in future research to evaluate these phenomena.

The 2020 survey suggests that osteopaths' views of the GOsC (*Pro-Regulator*) have become more mixed and polarised since 2014. More osteopaths (56% versus 44% in 2014) agreed or strongly agreed they are 'confident that osteopaths are well regulated by the GOsC'. The mean response to this statement (on a 1-5 scale, with 5 indicating strongly agree and 1 strongly disagreed) significantly increased from 3.19 in 2014 to 3.42 in 2020. However, fewer osteopaths (35% in 2020 versus 43% in 2014) agreed or strongly agreed that the GOsC communicates well with osteopaths; the mean response for this question significantly falling from 3.13 to 2.90.

Osteopaths' understanding of regulation and compliance (*Understanding regulation*) has increased. In 2020, 80% of osteopaths (compared 76% in 2014) agreed or strongly agreed they are 'familiar with the Osteopathic Practice Standards (OPS)'; the mean response rising from 3.83 to 4.03. In 2020, 63% (versus 49% in 2014) agreed or strongly agreed that they have a 'clear sense of whether they are complying with the OPS'; the mean response significantly rising from 3.34 to 3.65. However, in 2020, only 25% of osteopaths (vs 44% in 2014) agreed or strongly agreed that the 'OPS reflect what it means to be a good osteopath'.

Osteopaths have become significantly more positive about evidence-based practice (*Pro-evidence-based practice*). For example, in 2020 50% agreed or strongly agreed that 'practising evidence-based osteopathy improves patient care', compared with 38% in 2014.

Overall levels of reported *compliance* remain similar. In 2020, 41% (vs 45% in 2014) agreed or strongly agreed that what they do as an osteopath always fully complies with the OPS (20% in 2020 disagreed or strongly disagreed vs 18% in 2014), with the mean response to this question falling insignificantly from 3.30 to 3.25.

More osteopaths reported complying with regulation due to fear (*Fear-based compliance*); 61% (vs 45% in 2014) agreed or strongly agreed that they 'comply with the OPS to avoid getting into trouble with the GOsC'. This compares with 43% in 2020 agreeing or strongly agreeing that they 'comply with the OPS because they reflect what it means to be a good osteopaths'.

While not part of a wider factor, we also note a significant drop in osteopaths' reported understanding of and confidence in GOsC's disciplinary processes (see Appendix 1). For example, in 2020 only 35% (vs 43% in 2014) agreed or strongly agreed they 'fully understand the GOsC's process for handling complaints made against osteopaths by patients or the public'. Even fewer (only 16% in 2020 vs 23% in 2014) osteopaths agreed or strongly agreed that they are 'confident that the GOsC's disciplinary procedures produce fair outcomes', with 54% in 2020 (vs 27% in 2014) disagreeing or strongly disagreeing and the mean response significantly dropping from 2.94 in 2014 to 2.39 in 2020.

In 2020, 23% of survey respondents reported feeling *anger*, 36% *irritation*, 38% *frustration*, 38% *fed up* and 42% *cynical* about regulation often or very often. Responses to these five questions created a new factor for *anger about regulation*. 28% of survey respondents felt anxious and 31% worried about regulation often or very often. Responses to these two questions created a separate new factor for *anxiety about regulation*.

Our analysis of 2020 survey data and new compliance model again showed that being *Pro-regulator*, *Pro-evidence-based practice* and *Understanding regulations* were highly correlated with *Compliance* (reflecting the persuasion based pathway). *Anxiety about regulation* was highly associated with *Fear-based compliance* but insignificantly correlated with *Compliance*. *Anger about regulation* was negatively associated with both *Fear-based compliance* and *Compliance*.

Our analysis suggests that fear, anger and anxiety about regulation are not *per se* associated with compliance, and that promoting a positive view and understanding of regulation and evidence-based practice appears to be a more reliable pathway to compliance. Our model suggests that while osteopaths' greater understanding of regulation and support for evidence-based practice may have increased compliance, this may have been counteracted by higher levels of fear, anxiety and anger about regulation, which reduced compliance, leading to little change in osteopaths' levels of compliance overall.

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1. Introduction

A team of academic researchers from Warwick Business School (WBS) collaborated with the General Osteopathic Council (GOsC) to conduct an online survey of UK osteopaths' views and experiences of osteopathic regulation in 2020. This followed up on a similar survey in 2014 (see <https://www.osteopathy.org.uk/news-and-resources/research-surveys/gosc-research/research-to-promote-effective-regulation/>), which we reported on earlier (McGivern et al., 2015). In this new report, we detail the key findings of the 2020 survey, which we compare with the 2014 survey results where possible.

The 2020 research received ethical approval from the University of Warwick Health and Social Science Research Ethics Committee (as with the research in 2014) and was funded by the University of Warwick, with the GOsC providing support in the form of research access, advice and publicity. In 2019, we also interviewed 20 osteopaths about their views and experiences of professional regulation but only briefly use these interview data in this report to illustrate and explain assumptions in our compliance model.

The 2020 survey, which was open from 20th January to 3rd March 2020, was completed by 612 osteopaths (representing 12% of the approximately 5300 on the GOsC register at the time, compared to a 17% response rate to the 2014 survey). The GOsC publicised the survey on its website, in e-bulletins sent to osteopaths on the GOsC-register and in *The Osteopath*. The survey was also publicised on Twitter and by the *Institute of Osteopathy*, which we would like to thank for their support.

The 2014 and 2020 surveys contained a series of statements (questions), which respondents were asked to respond to on a 5 point scale (1 = strongly disagree; 5 = strongly agree) unless otherwise stated. The surveys also asked for demographic information about respondents, enabling the Warwick team to identify trends in survey responses among particular kinds of osteopaths (but not identify individual respondents). For example, we identified that longer qualified osteopaths had some different views of regulation compared with osteopaths who had more recently qualified.

Both the 2014 and 2020 research studies were framed by theory about 'responsive regulation' (Ayres and Braithwaite, 1992). This theory suggests that by engaging with regulatees, explaining why regulations and compliance are a good idea, and improving regulations in response to feedback, regulators can persuade most regulatees to comply. However, a minority will only comply with regulations if they fear punishment for non-compliance. Regulators therefore also need to engage with regulatees to evaluate levels of compliance and rebalance their use of persuasion and punishment to maximise compliance.

Our analysis of 2014 survey data identified one question measuring '**Compliance**' and five factors (groups of questions that respondents tended to answer in a similar way, indicating a wider single construct, which we show later in the report). We labelled these factors:

- '**Pro regulator**' - a positive view of the GOsC and its regulation;
- '**Pro-evidence-based practice**' - a positive view of evidence-based practice in osteopathy;
- '**Inappropriate regulation**' - viewing osteopathic regulation as inappropriate for osteopathic practice;
- '**Understanding regulations**' - having a clear understanding of the Osteopathic Practice Standards (OPS) and sense of whether complying with them;

- **'Fear-based compliance'** - complying with regulation due to the fear of being punished by the GOsC or sued by a patient for not doing so.

Based on interviews with osteopaths and regulators that we conducted in 2014, a review of literature relating to the organisation and regulation of the osteopathy profession (McGivern et al., 2015) and responsive regulation theory (Ayres and Braithwaite, 1992), we developed a model explaining compliance. We then ran a structural equation model to test the hypothesised associations between these factors and compliance.

As noted above, results suggested that promoting a positive view and understanding of regulation and evidence-based practice may be more likely to lead to compliance than using fear. Given that this contradicts an assumption in responsive regulation theory that fear of punishment for non-compliance also leads to compliance, we measured compliance in a more comprehensive way in the 2020 survey and tested the relationships in the model further. We discuss this later in the report.

2. Survey results: 2020 versus 2014

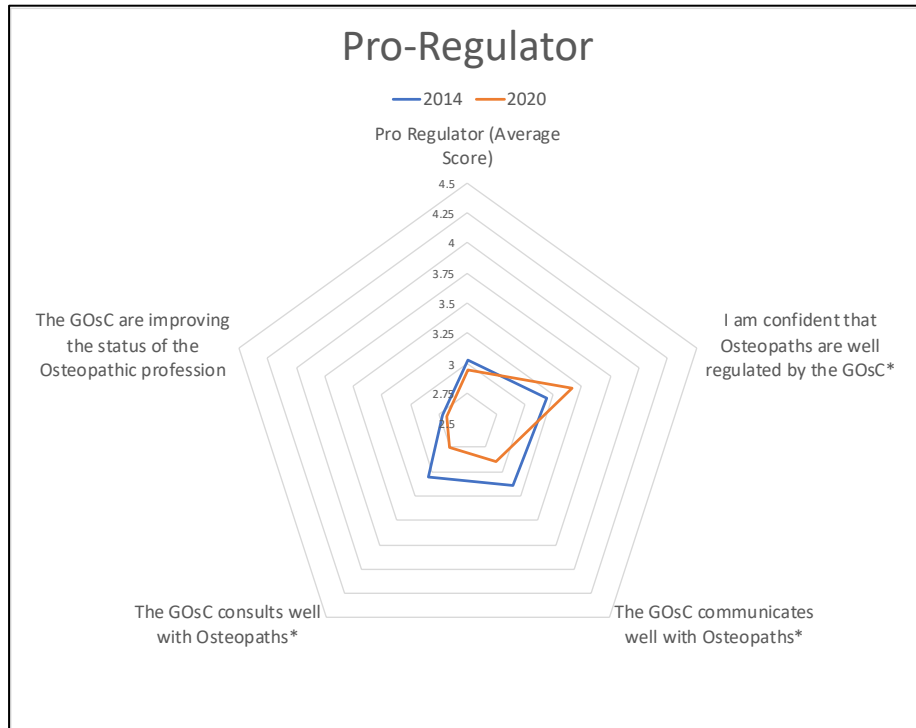
In this section, we compare the results of the 2014 and 2020 surveys for the questions forming the factors identified in the 2014 survey (we present data for additional questions later in the report). We present the frequencies of responses for the individual questions in tables and the mean value for each question in radar graphs. We then present the mean and standard deviations of each question in a separate table below. We ran means difference tests to establish whether the difference between the values for 2014 and 2020 were statistically significant. We only interpret the scores that were statistically significant as 'different'.

Pro-Regulator

In 2020, osteopaths' views of the GOsC appear to have become more mixed and polarised. Significantly more osteopaths (56% compared with 44% in 2014) are 'confident that osteopaths are well regulated by the GOsC'. However, fewer osteopaths in 2020 agree the GOsC communicates (35% in 2020 vs 43% in 2014) or consults (30% in 2020 vs 36% in 2014) well with osteopaths. Osteopaths' views of whether 'the GOsC are improving the status of the osteopathic profession' have also become more polarised in 2020; more osteopaths both agree (32% in 2020 vs 25% in 2014) and disagree (47% in 2020 vs 41% in 2014) with this statement.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I am confident that osteopaths are well regulated by the GOsC	Strongly Disagree	61	7.6%	57	9.3%
	Disagree	135	16.8%	95	15.5%
	Neither Agree nor Disagree	253	31.5%	120	19.6%
	Agree	300	37.4%	211	34.5%
	Strongly Agree	54	6.7%	129	21.1%
The GOsC communicates well with osteopaths	Strongly Disagree	60	7.5%	83	13.6%
	Disagree	151	18.8%	153	25%
	Neither Agree nor Disagree	245	30.5%	161	26.3%
	Agree	313	39%	171	27.9%
	Strongly Agree	34	4.2%	44	7.2%
The GOsC consults well with osteopaths	Strongly Disagree	53	6.6%	102	16.7%
	Disagree	173	21.5%	166	27.1%
	Neither Agree nor Disagree	288	35.9%	163	26.6%
	Agree	261	32.5%	142	23.2%
	Strongly Agree	28	3.5%	39	6.4%
The GOsC are improving the status of the osteopathic profession	Strongly Disagree	122	15.2%	148	24.2%
	Disagree	208	25.9%	142	23.2%
	Neither Agree nor Disagree	270	33.6%	127	20.8%
	Agree	177	22%	147	24%
	Strongly Agree	26	3.2%	48	7.8%

In the graph below we show the 2014 and 2020 mean responses to these questions and to the overall *Pro-regulator* construct. We show the mean responses to these questions and standard deviations in a table later in the report.

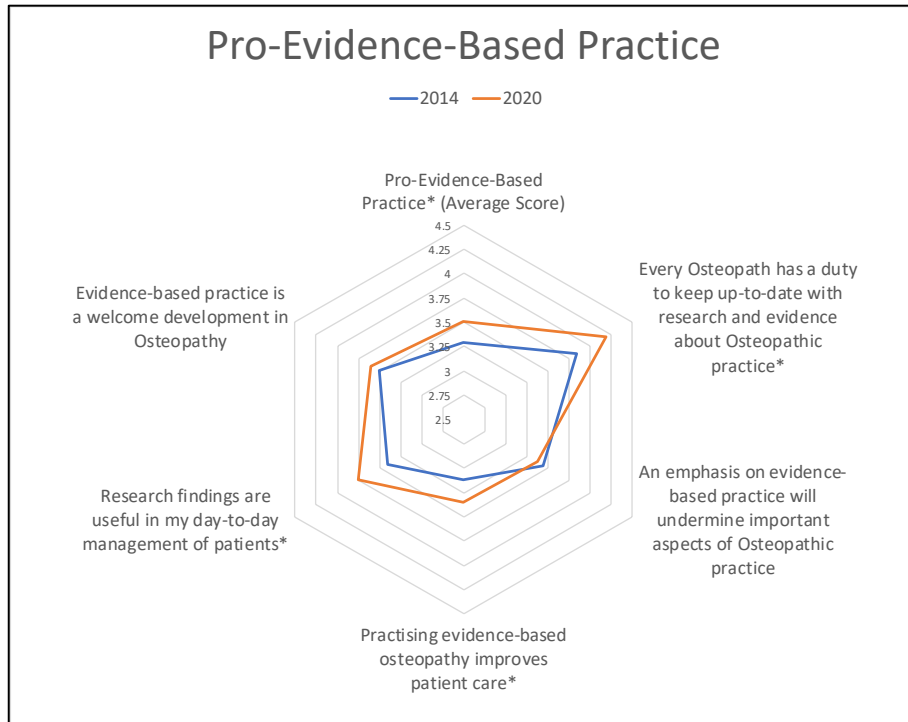


Note: Figure shows the mean for each individual question (average response across all participants). The response scale ranges from 1 (not at all) to 5 (very much). * Indicates a statistically significant difference between 2014 and 2020 means.

Pro-Evidence-based Practice

Osteopaths have become significantly more positive about evidence-based practice (EBP) since 2014. For example, 50% of osteopaths in 2020 agreed or strongly agreed that 'practising evidence-based osteopathy improves patient care', compared to 38% in 2014.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
Every osteopath has a duty to keep up-to-date with research and evidence about osteopathic practice	Strongly Disagree	8	1%	9	1.5%
	Disagree	53	6.6%	26	4.2%
	Neither Agree nor Disagree	131	16.3%	61	10%
	Agree	468	58.3%	257	42%
	Strongly Agree	143	17.8%	259	42.3%
An emphasis on evidence-based practice will undermine important aspects of osteopathic practice	Strongly Disagree	40	5%	74	12.1%
	Disagree	146	18.2%	106	17.3%
	Neither Agree nor Disagree	192	23.9%	88	14.4%
	Agree	274	34.1%	209	34.2%
	Strongly Agree	151	18.8%	135	22.1%
Practising evidence-based osteopathy improves patient care	Strongly Disagree	48	6%	57	9.3%
	Disagree	170	21.2%	102	16.7%
	Neither Agree nor Disagree	277	34.5%	147	24%
	Agree	255	31.8%	184	30.1%
	Strongly Agree	53	6.6%	122	19.9%
Research findings are useful in my day-to-day management of patients	Strongly Disagree	28	3.5%	26	4.2%
	Disagree	132	16.4%	72	11.8%
	Neither Agree nor Disagree	206	25.7%	84	13.7%
	Agree	353	44%	276	45.1%
	Strongly Agree	84	10.5%	154	25.2%
Evidence-based practice is a welcome development in osteopathy	Strongly Disagree	40	5%	39	6.4%
	Disagree	101	12.6%	79	12.9%
	Neither Agree nor Disagree	200	24.9%	121	19.8%
	Agree	341	42.5%	219	35.8%
	Strongly Agree	121	15.1%	154	25.2%

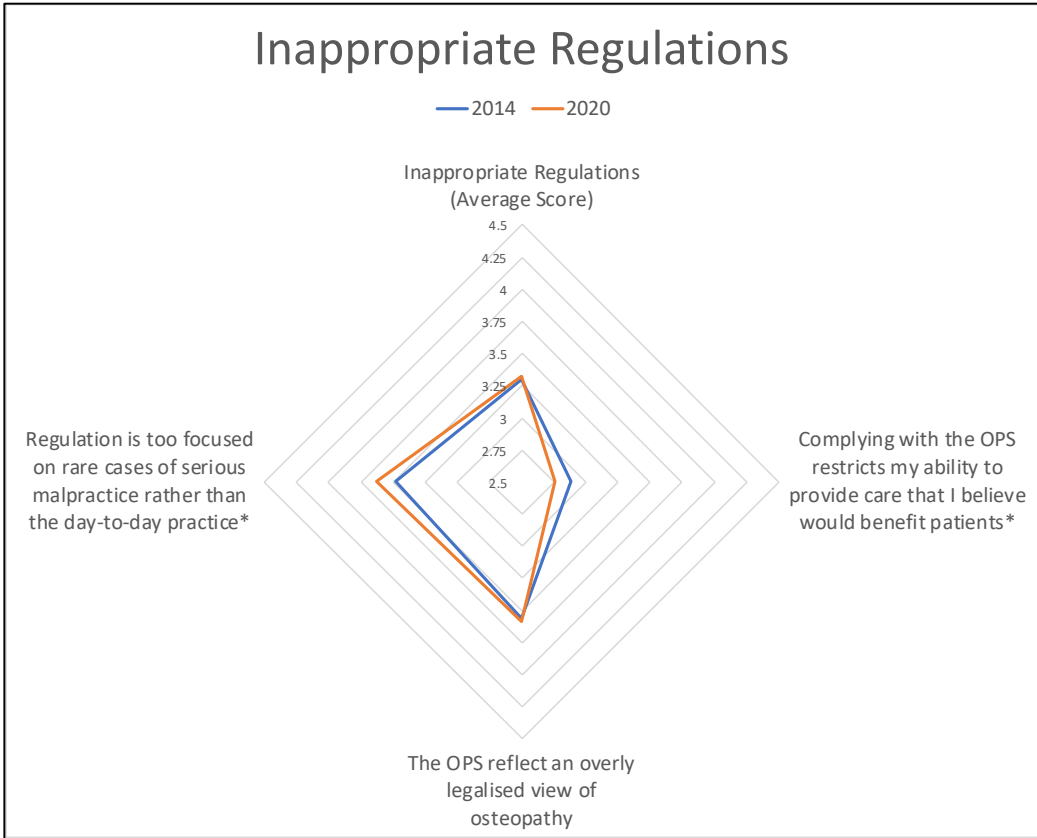


Note: Figure shows the mean for each individual question (average response across all participants). The response scale ranges from 1 (not at all) to 5 (very much). *Indicates a statistically significant difference between 2014 and 2020 means.

Inappropriate Regulations

Overall, osteopaths' views of whether the OPS and regulation are inappropriate are relatively unchanged but responses to individual questions are mixed. More osteopaths both agree and disagree that 'complying with the OPS restricts my ability to provide care that I believe would benefit patients', while overall osteopaths have become significantly more positive about this. However, significantly more osteopaths believe that 'Regulation is too focused on rare cases of serious malpractice rather than the day-to-day practice'.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
Complying with the OPS restricts my ability to provide care that I believe would benefit patients	Strongly Disagree	32	4%	126	20.6%
	Disagree	265	33%	150	24.5%
	Neither Agree nor Disagree	304	37.9%	142	23.2%
	Agree	173	21.5%	130	21.2%
	Strongly Agree	29	3.6%	64	10.5%
The OPS reflect an overly legalised view of osteopathy	Strongly Disagree	12	1.5%	38	6.2%
	Disagree	103	12.8%	86	14.1%
	Neither Agree nor Disagree	226	28.1%	113	18.5%
	Agree	351	43.7%	233	38.1%
	Strongly Agree	111	13.8%	142	23.2%
Regulation is too focused on rare cases of serious malpractice rather than the day-to-day practice	Strongly Disagree	13	1.6%	34	5.6%
	Disagree	111	13.8%	78	12.7%
	Neither Agree nor Disagree	275	34.2%	127	20.8%
	Agree	288	35.9%	212	34.6%
	Strongly Agree	116	14.4%	161	26.3%

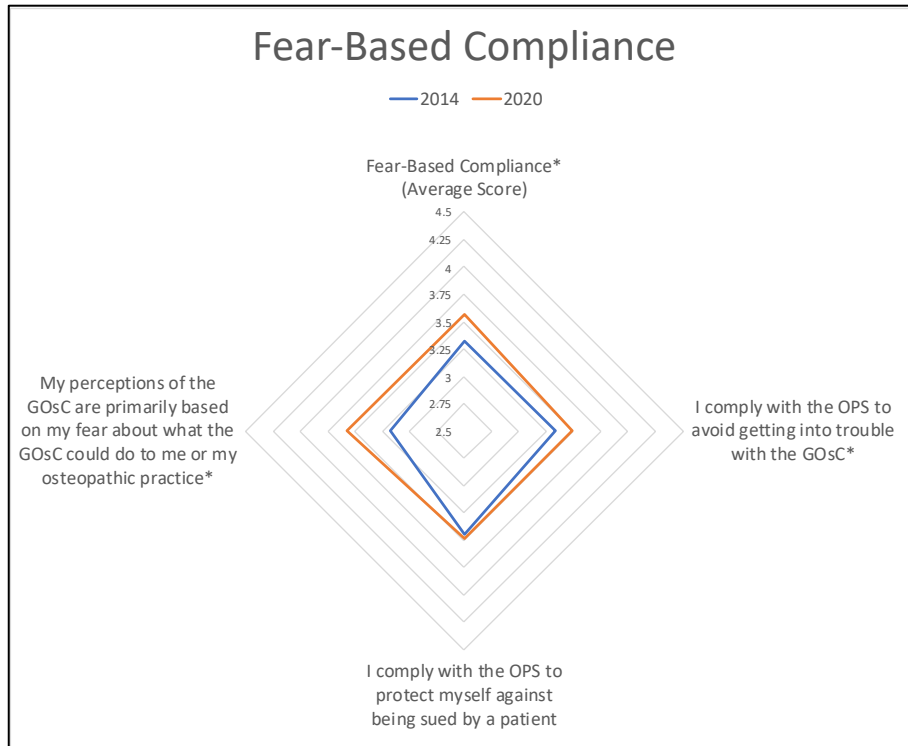


Note: The figure above shows the mean for each individual question (average response across all participants). The response scale ranges from 1 (not at all) to 5 (very much).
 *Indicates a statistically significant difference between 2014 and 2020 means.

Fear-based Compliance

Osteopaths have become significantly more fearful of the consequences of non-compliance with the OPS and osteopathic regulation. For example, in 2020 61% (vs 45% in 2014) agree they 'comply with the OPS to avoid getting into trouble with the GOsC'.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I comply with the OPS to avoid getting into trouble with the GOsC	Strongly Disagree	35	4.4%	34	5.6%
	Disagree	130	16.2%	78	12.7%
	Neither Agree nor Disagree	238	29.6%	127	20.8%
	Agree	325	40.5%	212	34.6%
	Strongly Agree	35	4.4%	161	26.3%
I comply with the OPS to protect myself against being sued by a patient	Strongly Disagree	18	2.2%	43	7%
	Disagree	110	13.7%	85	13.9%
	Neither Agree nor Disagree	242	30.1%	151	24.7%
	Agree	358	44.6%	197	32.2%
	Strongly Agree	75	9.3%	136	22.2%
My perceptions of the GOsC are primarily based on my fear about what the GOsC could do to me or my osteopathic practice	Strongly Disagree	60	7.5%	21	3.4%
	Disagree	191	23.8%	93	15.2%
	Neither Agree nor Disagree	179	22.3%	173	28.3%
	Agree	292	36.4%	224	36.6%
	Strongly Agree	81	10.1%	101	16.5%

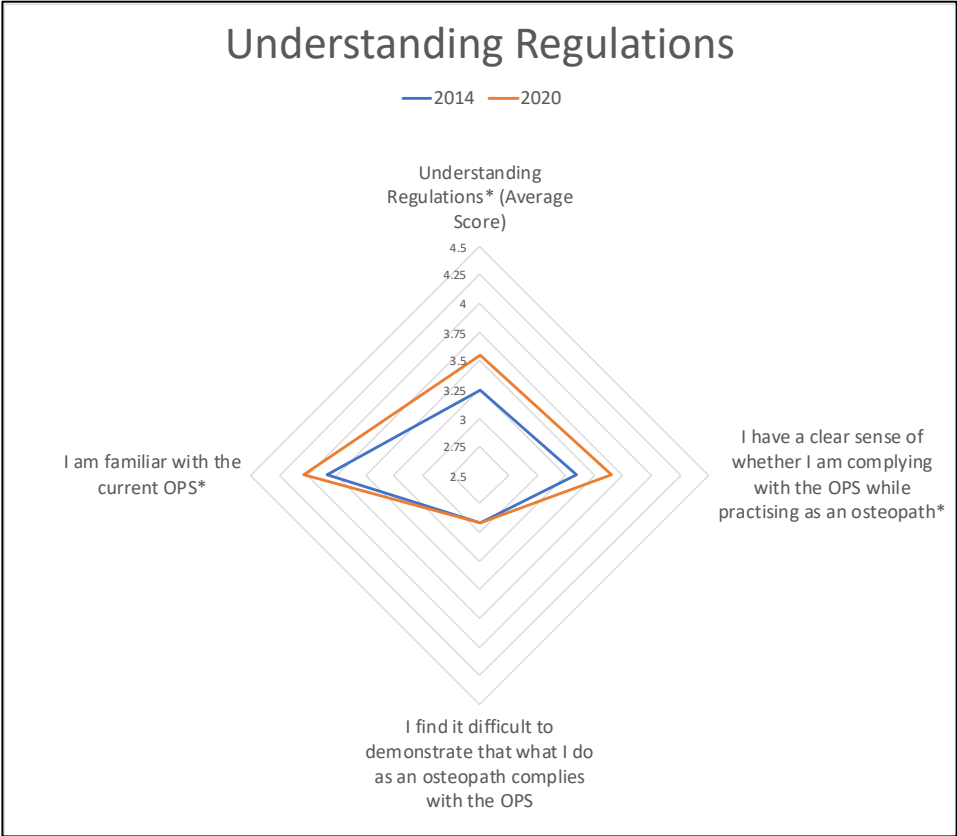


Note: The figure shows the mean for each individual question (average response across all participants). The response scale ranges from 1 (not at all) to 5 (very much).
 *Indicates a statistically significant difference between 2014 and 2020 means.

Understanding Regulations

Osteopaths' understanding of regulations and compliance has improved. In 2020, 80% of osteopaths (compared 76% in 2014) agreed or strongly agreed that they are familiar with the OPS and 63% (compared to 49% in 2014) agreed or strongly agreed that they have a clear sense of whether they are complying with the OPS.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I have a clear sense of whether I am complying with the OPS while practising as an osteopath	Strongly Disagree	12	1.5%	18	2.9%
	Disagree	138	17.2%	88	14.4%
	Neither Agree nor Disagree	257	32%	118	19.3%
	Agree	356	44.3%	253	41.3%
	Strongly Agree	40	5%	135	22.1%
I find it difficult to demonstrate that what I do as an osteopath complies with the OPS	Strongly Disagree	21	2.6%	66	10.8%
	Disagree	245	30.5%	149	24.3%
	Neither Agree nor Disagree	336	41.8%	193	31.5%
	Agree	186	23.2%	173	28.3%
	Strongly Agree	15	1.9%	31	5.1%
I am familiar with the current OPS	Strongly Disagree	4	0.5%	7	1.1%
	Disagree	55	6.8%	42	6.9%
	Neither Agree nor Disagree	138	17.2%	72	11.8%
	Agree	481	59.9%	293	47.9%
	Strongly Agree	125	15.6%	198	32.4%



Note: The figure shows the mean for each individual question (average response across all participants). The response scale ranges from 1 (not at all) to 5 (very much). *Indicates a statistically significant difference between 2014 and 2020 means.

Compliance

Overall, levels of reported compliance remain broadly similar. In 2020, 41% (vs 45% in 2014) agree that what they do as an osteopath always fully complies with the OPS (20% in 2020 disagree vs 18% in 2014).

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
What I do as an osteopath always fully complies with all the OPS	Strongly Disagree	14	1.7%	16	2.6%
	Disagree	133	16.6%	109	17.8%
	Neither Agree nor Disagree	298	37.1%	239	39.1%
	Agree	310	38.6%	199	32.5%
	Strongly Agree	48	6%	49	8%

Comparison of mean responses for 2014 and 2020 survey questions

Below we compared the mean (average) response to the questions asked in the 2014 and 2020 surveys (on a five point scale of 5 = strongly agree; 1 = strongly disagree). Questions are grouped according to the factor construct, with standard deviations (indicating the spread of responses, with a higher number indicating greater spread) displayed in brackets. The final column provides the difference between the mean score in the 2014 and 2020 surveys, with statistically significant differences marked with an asterisk.

Negatively worded questions are displayed in their original wording, and the means displayed are the original responses. However, to calculate the average score for the wider factor construct, negatively worded questions were reverse coded to indicate the extent to which participants agree with the broader factor construct. As discussed, and shown later in this report, we revised and improved the factors in the 2020 survey but these involved new questions from the 2020 survey, so we can only compare the 2014 factors and related questions as listed below.

Question	2014 Average (SD)	2020 Average (SD)	Difference
Pro-Regulator:	3.02 (.87)	2.94 (.97)	-.08
I am confident that osteopaths are well regulated by the GOsC	3.19 (1.04)	3.42 (1.24)	+.23*
The GOsC communicates well with osteopaths	3.14 (1.01)	2.90 (1.16)	-.24*
The GOsC consults well with osteopaths	3.05 (.97)	2.75 (1.17)	-.30*
The GOsC are improving the status of the osteopathic profession	2.72 (1.07)	2.68 (1.29)	-.04
Pro-Evidence-Based Practice:	3.29[†] (.76)	3.51[†] (.89)	+.22*
Every osteopath has a duty to keep up-to-date with research and evidence about osteopathic practice	3.85 (.82)	4.19 (.89)	+.34*
An emphasis on evidence-based practice will undermine important aspects of osteopathic practice ^R	3.44 (1.13)	3.37 (1.32)	-.07
Practising evidence-based osteopathy improves patient care	3.11 (1.00)	3.35 (1.23)	+.24*
Research findings are useful in my day-to-day management of patients	3.41 (1.00)	3.75 (1.09)	+.34*
Evidence-based practice is a welcome development in osteopathy	3.50 (1.10)	3.60 (1.18)	+.10
Inappropriate Regulations:	3.30 (.76)	3.33 (.94)	+.03
Complying with the OPS restricts my ability to provide care that I believe would benefit patients	2.88 (.91)	2.76 (1.28)	-.12*
The OPS reflect an overly legalised view of osteopathy	3.56 (.93)	3.58 (1.17)	+.02

Regulation is too focused on rare cases of serious malpractice rather than the day-to-day practice	3.48 (.96)	3.63 (1.16)	+.15*
Fear-Based Compliance:	3.32 (.80)	3.51 (.88)	.19*
I comply with the OPS to avoid getting into trouble with the GOsC	3.34 (.99)	3.49 (1.18)	.15*
I comply with the OPS to protect myself against being sued by a patient	3.45 (.92)	3.48 (1.05)	+.03
My perceptions of the GOsC are primarily based on my fear about what the GOsC could do to me or my osteopathic practice	3.18 (1.13)	3.57 (1.25)	+.39*
Understanding Regulations:	3.42[†] (.64)	3.59[†] (.82)	+.17*
I have a clear sense of whether I am complying with the OPS while practising as an osteopath	3.34 (.87)	3.65 (1.07)	+.31*
I find it difficult to demonstrate that what I do as an osteopath complies with the OPS ^R	2.91 (.84)	2.92 (1.08)	+.01
I am familiar with the current OPS	3.83 (.79)	4.03 (.91)	.20*
Compliance:	3.31 (.88)	3.25 (.93)	-.06
What I do as an osteopath always fully complies with all the OPS	3.31 (.88)	3.25 (.93)	-.06

Note: ^R Indicates that this mean has been reverse coded before the overall mean of the factor score was calculated, so that all questions within the overall factor are oriented in the same way. The question mean presented in the table is not reverse coded yet.

[†] Indicates that means comprised of some questions that have been reverse coded.

3. 2020 Survey Factors

We added new questions in the 2020 survey to further explore interesting topics that arose from the 2014 survey data. We ran a new factor analysis with 2020 survey data in which we:

- Replicated four of the factors (*Pro-regulator, Pro-evidence-based practice, Understanding regulations, and Fear-based compliance*) in the 2020 survey data but these factors have become more robust, as they were based upon responses to more questions.
- Did not replicate a factor for *Inappropriate Regulation* in the 2020 survey.
- Found a new factor that we labelled *Fear of Harming Patients* in the 2020 survey.
- Established a *Compliance* factor based on five questions (rather than using only a single question as we did in the 2014 survey).
- We also asked questions about emotional responses to regulation, from which we identified three factors for feeling *positive, neutral* and *negative about regulation*. Within the factor for feeling negative, we identified two sub-categories relating to feeling *angry about regulation* and *anxious about regulation*.

We note that many of the 2020 factors are labelled the same as the 2014 factors for consistency and the data above in the report compared the constructs from 2014 with the data from 2020. Below we show the data for the enhanced factors. These cannot be directly compared with similarly labelled factors for 2014 as they contain different questions. However, moving forward, research will be able to use these more robust factors to compare how future views and experiences of regulation and compliance compare with those in 2020. We detail the responses to these questions below.

Pro-Regulator

In the 2020 survey, seven questions formed a new factor relating to *Pro-regulator*, which included the four pre-existing questions noted above (along with data):

- I am confident that osteopaths are well regulated by the GOsC;
- The GOsC communicates well with osteopaths;
- The GOsC consults well with osteopaths;
- The GOsC is improving the status of the osteopathic profession.

The 2020 *Pro-regulator* factor included three new question, which we detail with responses to in the table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
Communication between the GOsC and osteopaths can be poor ^R	Strongly Disagree	n/a	n/a	29	4.70%
	Disagree	n/a	n/a	88	14.40%
	Neither Agree nor Disagree	n/a	n/a	165	27%
	Agree	n/a	n/a	215	35.10%
	Strongly Agree	n/a	n/a	115	18.80%
I have concerns about how the GOsC regulates osteopaths ^R	Strongly Disagree	n/a	n/a	52	8.50%
	Disagree	n/a	n/a	73	11.90%
	Neither Agree nor Disagree	n/a	n/a	112	18.30%
	Agree	n/a	n/a	213	34.80%
	Strongly Agree	n/a	n/a	162	26.50%
Regulation has had a positive effect on how I practise as an osteopath	Strongly Disagree	60	7.50%	78	12.70%
	Disagree	173	21.50%	114	18.60%
	Neither Agree nor Disagree	247	30.80%	163	26.60%
	Agree	247	30.80%	170	27.80%
	Strongly Agree	76	9.50%	87	14.20%

Note: ^R Indicates where an question is negatively worded, so data has been reverse coded to create a factor in which all questions within the factor are oriented in the same way.

Fear-based Compliance

Our analysis of 2020 survey data identified six questions forming a new factor for *Fear-based compliance*, which included two of the pre-existing questions noted above (along with data):

- I comply with the OPS to avoid getting into trouble with the GOsC;
- I comply with the OPS to protect myself against being sued by a patient

The 2020 *Fear-based compliance* factor included four new questions, as noted in the table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I comply with the OPS because I worry about what the GOsC could do to me and my practice if I didn't	Strongly Disagree	n/a	n/a	33	5.40%
	Disagree	n/a	n/a	112	18.30%
	Neither Agree nor Disagree	n/a	n/a	138	22.50%
	Agree	n/a	n/a	212	34.60%
	Strongly Agree	n/a	n/a	117	19.10%
I am concerned about making a mistake that gets me into trouble with the GOsC	Strongly Disagree	n/a	n/a	31	5.10%
	Disagree	n/a	n/a	87	14.20%
	Neither Agree nor Disagree	n/a	n/a	90	14.70%
	Agree	n/a	n/a	215	35.10%
	Strongly Agree	n/a	n/a	189	30.90%
I am scared about making a mistake that leads to a GOsC investigation	Strongly Disagree	n/a	n/a	33	5.40%
	Disagree	n/a	n/a	89	14.50%
	Neither Agree nor Disagree	n/a	n/a	103	16.80%
	Agree	n/a	n/a	232	37.90%
	Strongly Agree	n/a	n/a	155	25.30%
I feel anxious about making a mistake that leads to a Fitness-to-Practise hearing	Strongly Disagree	n/a	n/a	57	9.30%
	Disagree	n/a	n/a	89	14.50%
	Neither Agree nor Disagree	n/a	n/a	78	12.70%
	Agree	n/a	n/a	219	35.80%
	Strongly Agree	n/a	n/a	169	27.60%

Understanding Regulations

Our analysis of 2020 survey data showed six questions forming a new factor for *Understanding Regulations*, which included two pre-existing questions (noted above along with associated data):

- I am familiar with the current OPS;
- I have a clear sense of whether I am complying with the OPS while practising as an osteopath.

The 2020 *Understanding Regulations* factor included four new questions, as noted in the table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I'm not that familiar with the OPS ^R	Strongly Disagree	n/a	n/a	233	38.10%
	Disagree	n/a	n/a	194	31.70%
	Neither Agree nor Disagree	n/a	n/a	111	18.10%
	Agree	n/a	n/a	65	10.60%
	Strongly Agree	n/a	n/a	9	1.50%
I am not always clear about what the OPS mean in practice ^R	Strongly Disagree	n/a	n/a	60	9.80%
	Disagree	n/a	n/a	181	29.60%
	Neither Agree nor Disagree	n/a	n/a	166	27.10%
	Agree	n/a	n/a	189	30.90%
	Strongly Agree	n/a	n/a	16	2.60%
I am unsure about what the new OPS actually require me to do ^R	Strongly Disagree	n/a	n/a	133	21.70%
	Disagree	n/a	n/a	189	30.90%
	Neither Agree nor Disagree	n/a	n/a	129	21.10%
	Agree	n/a	n/a	131	21.40%
	Strongly Agree	n/a	n/a	30	4.90%
I find the OPS confusing ^R	Strongly Disagree	n/a	n/a	58	9.50%
	Disagree	n/a	n/a	189	30.90%
	Neither Agree nor Disagree	n/a	n/a	177	28.90%
	Agree	n/a	n/a	153	25%
	Strongly Agree	n/a	n/a	35	5.70%

Note: ^R Indicates where an question is negatively worded, so data was reverse coded to create a factor within which all questions are oriented in the same way.

Pro-Evidence-based Practice

Our analysis of 2020 survey data showed six questions forming a new factor for *Pro-evidence-based practice*, which included five of the pre-existing questions noted above (along with associated data):

- Every osteopath has a duty to keep up-to-date with research and evidence about osteopathic practice;
- An emphasis on evidence-based practice will undermine important aspects of osteopathic practice^R;
- Practising evidence-based osteopathy improves patient care;
- Research findings are useful in my day-to-day management of patients;
- Evidence-based practice is a welcome development in osteopathy.

The 2020 *Pro-evidence-based practice* factor included one new question as noted in the table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I have changed my practice due to new research or evidence that has been recently published	Strongly Disagree	n/a	n/a	35	5.70%
	Disagree	n/a	n/a	87	14.20%
	Neither Agree nor Disagree	n/a	n/a	129	21.10%
	Agree	n/a	n/a	225	36.80%
	Strongly Agree	n/a	n/a	136	22.20%

Note: ^R Indicates where an question is negatively worded, so data has been reverse coded to create a factor in which all questions are oriented in the same way.

Compliance

Our analysis of 2020 survey data identified five questions that formed a factor for *Compliance*, including the question previously used in 2014 to assess compliance (as noted above along with associated data):

- What I do as an osteopath always fully complies with all the OPS.

The new factor for also included four new questions as noted in the table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I make sure my practice is always in line with the current OPS	Strongly Disagree	n/a	n/a	17	2.80%
	Disagree	n/a	n/a	51	8.30%
	Neither Agree nor Disagree	n/a	n/a	112	18.30%
	Agree	n/a	n/a	275	44.90%
	Strongly Agree	n/a	n/a	157	25.70%
I don't comply with all aspects of the OPS all of the time ^R	Strongly Disagree	n/a	n/a	73	11.90%
	Disagree	n/a	n/a	175	28.60%
	Neither Agree nor Disagree	n/a	n/a	201	32.80%
	Agree	n/a	n/a	143	23.40%
	Strongly Agree	n/a	n/a	20	3.30%
I sometimes ignore some of the OPS ^R	Strongly Disagree	n/a	n/a	182	29.70%
	Disagree	n/a	n/a	150	24.50%
	Neither Agree nor Disagree	n/a	n/a	162	26.50%
	Agree	n/a	n/a	101	16.50%
	Strongly Agree	n/a	n/a	17	2.80%
At times I am unable to comply with some OPS ^R	Strongly Disagree	n/a	n/a	114	18.60%
	Disagree	n/a	n/a	142	23.20%
	Neither Agree nor Disagree	n/a	n/a	191	31.20%
	Agree	n/a	n/a	138	22.50%
	Strongly Agree	n/a	n/a	27	4.40%

Note: ^R Indicates where an question is negatively worded, so data has been reverse coded to create a factor in which all questions are oriented in the same way.

Worry about Harming Patients

Our analysis identified a new factor that we label *Worry about Harming Patients*, which was distinct from the factor for fear-based compliance. We note these questions and related data in table below:

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I am concerned about making a mistake that could harm a patient	Strongly Disagree	n/a	n/a	51	8.30%
	Disagree	n/a	n/a	70	11.40%
	Neither Agree nor Disagree	n/a	n/a	96	15.70%
	Agree	n/a	n/a	244	39.90%
	Strongly Agree	n/a	n/a	151	24.70%
I am scared about making a mistake that negatively affects a patient	Strongly Disagree	n/a	n/a	41	6.70%
	Disagree	n/a	n/a	85	13.90%
	Neither Agree nor Disagree	n/a	n/a	110	18%
	Agree	n/a	n/a	244	39.90%
	Strongly Agree	n/a	n/a	132	21.60%
I feel anxious about making a mistake that could harm a patient	Strongly Disagree	n/a	n/a	60	9.80%
	Disagree	n/a	n/a	82	13.40%
	Neither Agree nor Disagree	n/a	n/a	116	19%
	Agree	n/a	n/a	237	38.70%
	Strongly Agree	n/a	n/a	117	19.10%

Mean responses and standard deviations for 2020 questions forming 2020 factors

The table below lists the mean scores survey participants gave to the question used to create the 2020 factors. Questions are grouped by factor and the table shows the average score (on a 1-5 scale; 5 = strongly agree; 1 = strongly disagree) and standard deviations (with a higher number indicating a greater spread of responses) displayed in brackets. Where available, 2014 means are also provided for comparison. As noted, although they might share the same label, factors from the 2014 and 2020 surveys contained different questions, so direct comparisons cannot be made between 2014 and 2020 factors in this table. Again where available, the final column provides the difference between the average score of the 2014 and 2020 surveys, with statistically significant differences highlighted with an asterisk.

Question	2014 Average (SD)	2020 Average (SD)	Difference
Pro-Regulator:		2.83[†] (.91)	
I am confident that osteopaths are well regulated by the GOsC	3.19 (1.04)	3.42 (1.24)	+ .23*
The GOsC communicates well with osteopaths	3.14 (1.01)	2.90 (1.16)	- .24*
The GOsC consults well with osteopaths	3.05 (.97)	2.75 (1.17)	- .30*
The GOsC is improving the status of the osteopathic profession	2.72 (1.07)	2.68 (1.29)	- .04
Communication between the GOsC and osteopaths can be poor ^R	n/a	3.49 (1.10)	
I have concerns about how the GOsC regulates osteopaths ^R	n/a	3.59 (1.23)	
Regulation has had a positive effect on how I practise as an osteopath	3.13 (1.60)	3.12 (1.23)	- .01
Understanding Regulations:		3.55[†] (.82)	
I'm not that familiar with the OPS ^R	n/a	2.06 (1.06)	
I am familiar with the current OPS	3.83 (.79)	4.03 (.91)	+ .20*
I have a clear sense of whether I am complying with the OPS while practising as an osteopath	3.34 (.87)	3.65 (1.07)	+ .31*
I am not always clear about what the OPS mean in practice ^R	n/a	2.87 (1.04)	
I am unsure about what the new OPS actually require me to do ^R	n/a	2.57 (1.19)	
I find the OPS confusing ^R	n/a	2.87 (1.07)	

Pro-Evidence-Based Practice:		3.51[†] (.86)	
Every osteopath has a duty to keep up-to-date with research and evidence about osteopathic practice	3.85 (.82)	4.19 (.89)	+.34*
An emphasis on evidence-based practice will undermine important aspects of osteopathic practice ^R	3.44 (1.13)	3.37 (1.32)	-.07
Practising evidence-based osteopathy improves patient care	3.11 (1.00)	3.35 (1.23)	+.24*
Research findings are useful in my day-to-day management of patients	3.41 (1.00)	3.75 (1.09)	+.34*
Evidence-based practice is a welcome development in osteopathy	3.50 (1.10)	3.60 (1.18)	+.10
I have changed my practice due to new research or evidence that has been recently published	n/a	3.56 (1.15)	
Fear-Based Compliance:		3.56 (.94)	
I comply with the OPS to avoid getting into trouble with the GOsC	3.34 (.99)	3.49 (1.18)	+.15*
I comply with the OPS to protect myself against being sued by a patient	3.45 (.92)	3.48 (1.05)	+.03
I comply with the OPS because I worry about what the GOsC could do to me and my practice if I didn't	n/a	3.44 (1.15)	
I am concerned about making a mistake that gets me into trouble with the GOsC	n/a	3.73 (1.19)	
I am scared about making a mistake that leads to a GOsC investigation	n/a	3.63 (1.16)	
I feel anxious about making a mistake that leads to a Fitness-to-Practise hearing	n/a	3.58 (1.28)	
Compliance:		3.44[†] (.85)	
What I do as an osteopath always fully complies with all the OPS	3.31 (.88)	3.25 (.93)	-.06
I make sure my practice is always in line with the current OPS	n/a	3.82 (1.00)	
I don't comply with all aspects of the OPS all of the time ^R	n/a	2.77 (1.04)	
I sometimes ignore some of the OPS ^R	n/a	2.38 (1.15)	
At times I am unable to comply with some OPS ^R	n/a	2.71 (1.14)	
Worry About Harming Patients:		3.54 (1.08)	
I am concerned about making a mistake that could harm a patient	n/a	3.61 (1.21)	

I am scared about making a mistake that negatively affects a patient	n/a	3.56 (1.17)	
I feel anxious about making a mistake that could harm a patient	n/a	3.44 (1.22)	

Note: ^RIndicates that this mean has been reverse coded before the overall mean of the factor score was calculated, so that all questions within the overall factor are oriented in the same way. The question mean presented in the table is not reverse coded.

[†] Indicates that this mean is comprised of some questions that have been reverse coded.

4. 2020 survey responses by demographic sub-groups

This section breaks down survey responses by demographic categories with respect to the different factors. Again, we only report statistically significant differences. These were calculated using T-tests and Anovas to establish differences between groups (e.g. gender) and correlations to establish the strength of relationships between continuous demographic variables (e.g. age) and factors.

Responses by age and time qualified as an osteopath

Older and longer-qualified osteopaths are more likely to be *pro-regulator* but less likely to report *fear-based compliance* or be *pro-evidence-based practice*. Longer qualified osteopaths appear less likely to report *compliance* with regulation and older osteopaths are less likely to *worry about harming patients*. *Understanding regulations* does not appear to be correlated with age or years qualified as an osteopath.

Correlations between constructs and age and years qualified as an osteopaths

Construct	Age (sig.)	Years Qualified (sig.)
Pro-Regulator	.09* (.04)	.11** (.01)
Fear-based Compliance	-.24** (.00)	-.18** (.00)
Understanding Regulations	0.03 (.44)	.05 (.18)
Pro-Evidence-based Practice	-.18** (.00)	-.15** (.00)
Compliance	-.08 (.06)	-.10* (.01)
Worry about Harming Patients	-.10* (.01)	-.07 (.10)

** = Correlation is significant at the 0.01 level (2-tailed), * = Correlation is significant at the 0.05 level (2-tailed)

Mean responses to constructs by age groups

Construct	<30 years	30-39 years	40-49 years	50-59 years	60+ years
Pro-Regulator	2.63	2.79	2.83	2.91	2.88
Fear-based Compliance	3.92	3.85	3.51	3.47	3.27
Understanding Regulations	3.59	3.51	3.56	3.56	3.59
Pro-Evidence-based Practice	3.66	3.80	3.57	3.33	3.37
Compliance	3.53	3.49	3.57	3.37	3.28
Worry about Harming Patients	3.76	3.75	3.46	3.45	3.52

Mean responses to constructs by years qualified as an osteopath

Construct	<5 years	5-14 years	15-24 years	25+ years
Pro-Regulator	2.75	2.70	2.89	2.97
Fear-based Compliance	3.63	3.78	3.56	3.29
Understanding Regulations	3.56	3.50	3.51	3.64
Pro-Evidence-based Practice	3.79	3.60	3.38	3.39
Compliance	3.60	3.50	3.37	3.35
Worry about Harming Patients	3.70	3.62	3.40	3.50

Responses by gender

In terms of gender, the only statistically significant differences found were that female osteopaths were higher in terms of *fear-based compliance* and *understanding regulations*.

Construct	Gender	Average score	Difference (sig.)
Pro-Regulator	Female	2.87	.01 (.93)
	Male	2.86	
Fear-based Compliance	Female	3.62	.18** (.03)
	Male	3.44	
Understanding Regulations	Female	3.66	.18** (.01)
	Male	3.48	
Pro-Evidence-based Practice	Female	3.50	.09 (.21)
	Male	3.59	
Compliance	Female	3.50	.07 (.32)
	Male	3.43	
Worry about Harming Patients	Female	3.51	.01 (.95)
	Male	3.52	

** = T-test is significant at the 0.01 level (2-tailed), * = T-test is significant at the 0.05 level (2-tailed)

Responses by osteopathic approach

Breaking down findings by osteopathic approach, the data suggests that osteopaths who use a *predominantly cranial/functional approach* (n=38 survey respondents) have a significantly lower mean score for all the factors compared with osteopaths with a mixed (n=294 survey respondents) or predominantly structural approach (n=272 survey respondents). However, we should be cautious in comparing groups of such different sizes. The only statistically significant difference between osteopaths with a *mixed* and *predominantly structural approach* to osteopathy (similar sized groups) was in their attitudes towards evidence-based practice, where those with *predominantly structural approach* were more positive than osteopaths with a *mixed approach*.

Construct	Approach	Average Score	Significant Difference
Pro-Regulator	Predominantly Cranial/Functional	2.50	Yes
	Mixed	2.82	
	Predominantly Structural	2.90	
Fear-based Compliance	Predominantly Cranial/Functional	3.24	Yes
	Mixed	3.54	
	Predominantly Structural	3.63	
Understanding Regulations	Predominantly Cranial/Functional	3.14	Yes
	Mixed	3.56	
	Predominantly Structural	3.60	
Pro-Evidence-based Practice	Predominantly Cranial/Functional	2.50	Yes
	Mixed	3.39	Yes
	Predominantly Structural	3.80	Yes
Compliance	Predominantly Cranial/Functional	3.01	Yes
	Mixed	3.42	
	Predominantly Structural	3.53	
Worry about Harming Patients	Predominantly Cranial/Functional	3.14	Yes
	Mixed	3.56	
	Predominantly Structural	3.60	

5. Emotional responses to regulation

In the 2020 survey, we asked about osteopaths' emotional responses to regulation. Specifically, we asked survey participants: 'How often do you feel each of the following about osteopathy regulation?' and then listed a series of emotional responses. We detail survey participants' responses to these in the table below:

Emotion	Response	N	%
Irritated	Almost never or never	82	13.40%
	Rarely	93	15.20%
	Sometimes	217	35.50%
	Often	130	21.20%
	Very often	90	14.70%
Anxious	Almost never or never	87	14.20%
	Rarely	145	23.70%
	Sometimes	210	34.30%
	Often	91	14.90%
	Very often	79	12.90%
Worried	Almost never or never	73	11.90%
	Rarely	135	22.10%
	Sometimes	214	35%
	Often	107	17.50%
	Very often	83	13.60%
Angry	Almost never or never	153	25%
	Rarely	144	23.50%
	Sometimes	173	28.30%
	Often	80	13.10%
	Very often	62	10.10%
Frustrated	Almost never or never	59	9.60%
	Rarely	113	18.50%
	Sometimes	208	34%
	Often	129	21.10%
	Very often	103	16.80%

Fed-up	Almost never or never	90	14.70%
	Rarely	94	15.40%
	Sometimes	198	32.40%
	Often	123	20.10%
	Very often	107	17.50%
Confused	Almost never or never	84	13.70%
	Rarely	154	25.20%
	Sometimes	224	36.60%
	Often	106	17.30%
	Very often	44	7.20%
Indifferent	Almost never or never	100	16.30%
	Rarely	125	20.40%
	Sometimes	243	39.70%
	Often	113	18.50%
	Very often	31	5.10%
Fed-up	Almost never or never	90	14.70%
	Rarely	94	15.40%
	Sometimes	198	32.40%
	Often	123	20.10%
	Very often	107	17.50%
Confused	Almost never or never	84	13.70%
	Rarely	154	25.20%
	Sometimes	224	36.60%
	Often	106	17.30%
	Very often	44	7.20%
Indifferent	Almost never or never	100	16.30%
	Rarely	125	20.40%
	Sometimes	243	39.70%
	Often	113	18.50%
	Very often	31	5.10%

Neutral	Almost never or never	70	11.40%
	Rarely	97	15.80%
	Sometimes	255	41.70%
	Often	148	24.20%
	Very often	42	6.90%
Cynical	Almost never or never	68	11.10%
	Rarely	99	16.20%
	Sometimes	190	31%
	Often	142	23.20%
	Very often	113	18.50%
Reassured	Almost never or never	120	19.60%
	Rarely	188	30.70%
	Sometimes	210	34.30%
	Often	63	10.30%
	Very often	31	5.10%
Inspired	Almost never or never	232	37.90%
	Rarely	212	34.60%
	Sometimes	115	18.80%
	Often	43	7%
	Very often	10	1.60%
Proud	Almost never or never	150	24.50%
	Rarely	179	29.20%
	Sometimes	167	27.30%
	Often	89	14.50%
	Very often	27	4.40%
Enthusiastic	Almost never or never	159	26%
	Rarely	233	38.10%
	Sometimes	148	24.20%
	Often	58	9.50%
	Very often	14	2.30%

How often do you feel each of the following about osteopathy regulation? Mean responses (on a 1-5 scale, with 1 = never or almost never and 5 = very often) and standard deviations in brackets:

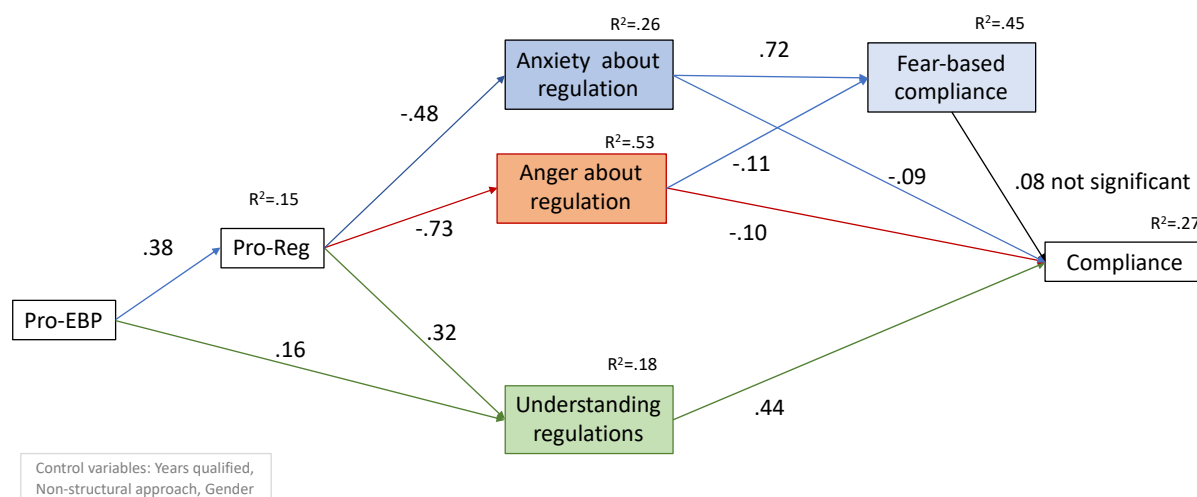
Question	2020 Average (Standard Deviation)
Irritated	3.09 (1.22)
Angry	2.60 (1.27)
Frustrated	3.17 (1.20)
Fed-up	3.10 (1.28)
Cynical	3.22 (1.24)
Anxious	2.89 (1.21)
Worried	2.99 (1.19)
Confused	2.79 (1.10)
Indifferent	2.75 (1.09)
Neutral	2.99 (1.07)
Reassured	2.50 (1.07)
Inspired	2.00 (.99)
Proud	2.45 (1.14)
Enthusiastic	2.24 (1.02)

We conducted a factor analysis of these emotional responses to regulation. From this, we identified factors for feeling *positive* (including questions about feeling *inspired*, *proud*, *enthusiastic*), *neutral* (including questions about feeling *indifferent* and *neutral*) and two negative emotion factors; feeling *angry* (including questions about feeling *irritated*, *cynical*, *fed-up*, *angry* and *frustrated*) and *anxiety* (including questions about feeling *anxious* and *worried*), which we use in our model explaining compliance below. The mean responses were 2.30 for positive emotions, 2.87 for neutral emotions, 2.94 for anxiety and 3.04 for angry.

6. Discussion: Understanding compliance

We developed a model explaining compliance drawing on assumptions about relationships based on 'responsive regulation' theory (Ayres and Braithwaite, 1992), our earlier research on osteopathic regulation (McGivern et al., 2015) and factors emerging from survey data. Our model showed persuasion- and punishment-based compliance pathways. We tested correlations between associated factors on these pathways using 2020 survey data. It is important to note that because we have no longitudinal data and were unable to link the responses from individuals over time, we cannot make claims to causality or draw any conclusions as to what is cause and effect.

The figure below illustrates the relationship and statistical associations between the factors for *Pro-EBP*, *Pro-regulation*, *Understanding regulations*, *Fear-based compliance*, *Anxiety about regulation*, *Angry about regulation* and *Compliance*. We see a strong positive association between being *Pro-EBP*, *Pro-regulator*, *Understanding regulations* and *Compliance* (reflecting the persuasion based pathway and similar associations in our analysis of 2014 data). We also see a strong negative association between the factors for being *Pro-EBP* and *Pro-regulation* and the factors for feeling *Angry* or *Anxiety about regulation*. *Anxiety about regulation* was highly associated with *Fear-based compliance* but insignificantly correlated with *Compliance*. *Anger about regulation* was negatively associated with both *Fear-based compliance* and *Compliance*.



The results of our analysis suggest three main pathways to compliance:

Pathway 1: WANTING TO COMPLY (compliance via understanding and accepting regulations): The strongest levels of overall compliance are reported by osteopaths who are most positive about evidence-based practice (Pro-EBP) and the GOsC (Pro-Regulator). We speculate that these osteopaths believe that drawing upon a scientific underpinning evidence-based and being statutorily regulated enhances their professional legitimacy and practice. These osteopaths are, in turn, more likely to understand and have internalised regulations, so show stronger levels of compliance in practice.

Pathway 2: DISAGREEING WITH REGULATIONS (via anger): Disagreeing with evidence-based practice (disagreeing with *Pro-EBP*) or regulation (disagreeing with *Pro-regulator*) is strongly associated with *Anger about regulation*. This pathway implies a rejection of regulation and evidence-based practice providing a sensible way to organise and guide

osteopathic practice. Osteopaths on this pathway may be keen to protect and maintain 'traditional approaches' to osteopathy within their profession, which they believe may be compromised by an over-emphasis on evidence-based practice or formal regulation. The following extracts from interviews about osteopathic regulation, conducted in 2019, illustrate different views of evidence-based practice within the osteopathy profession, which we believe may impact compliance today:

"There seem to be a lot of... osteopaths who think that evidence is something to be afraid of... that others are going to use it to try and control the way that we practice... or limit our scope. And there are others who think that evidence should guide and inform everything that we do and that actually we should stop doing most of what we are doing because there isn't any evidence to support it."

"That schism [within osteopathy] is growing, because... the push for an evidence-based approach is almost drawing certain individuals to disregarding a lot of the traditions of osteopathy... It is not just that there is no evidence for it, but there is evidence against it... which upsets the osteopaths who have embraced the more traditional approaches to osteopathy, to the point that I have been in meetings now where they can't have a conversation with each other.... It's become very bitter... We [osteopaths] don't have such a clear common goal. And we have got some people working really hard to improve the visibility of osteopathy, the AHP [Allied Health Profession] status... but a huge swathe of the profession has no idea what AHP is. So, they think that... basically they are trying to sell us to the NHS."

Anger is associated with perceiving a moral wrong and an offence (such as evidence-based practice or regulation undermining the traditional essence of osteopathy), explaining why when regulation elicits anger, compliance levels tend to be lower. Osteopaths who disagree with, and are angry about, the premise of regulations not only appear less likely to comply with regulations but also appear less likely to try to avoid the negative consequences of non-compliance through *fear-based compliance*.

Pathway 3: WORRYING ABOUT COMPLIANCE (via anxiety): Feeling uncomfortable evidence-based practice in osteopathy and regulation can also be associated with anxiety, rather than anger. As couple of osteopaths we interviewed (in 2019) commented:

"Rationally, I don't think that I ever did do anything [harmful to patients]... but it doesn't take away the anxiety that I might."

"You could be falling short of regulatory standards but without knowing it, and not deliberately."

Osteopaths who are both negative and anxious about regulation (and related complaints and disciplinary procedures) are likely to be motivated to comply with regulation due to fear of the consequences of non-compliance (*Fear-based compliance*). Our results show those who respond to regulation with anxiety, also report higher *fear-based compliance*. However, our analysis of 2020 survey data and explanatory model of compliance pathways suggests that fear, anger and anxiety about regulation (and punishment for non-compliance) may not, per se, enhance compliance levels. By contrast, promoting belief in and understanding of regulation and Evidence-based practice appear to be a more reliable pathway to compliance.

Appendix 1: Additional 2020 survey questions and responses

Below are the remaining 2020 survey questions that were not used in the factors discussed above and related survey responses. Where available, 2014 data for the equivalent question is also provided for comparison.

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I am mindful of the OPS when treating patients	Strongly Disagree			21	3.40%
	Disagree			47	7.70%
	Neither Agree nor Disagree			94	15.40%
	Agree			252	41.20%
	Strongly Agree			198	32.40%
Regulation by the GOsC is undermining the quality of osteopathy	Strongly Disagree			77	12.60%
	Disagree			134	21.90%
	Neither Agree nor Disagree			106	17.30%
	Agree			180	29.40%
	Strongly Agree			115	18.80%
Complying with the OPS restricts my ability to provide care that I believe would benefit patients	Strongly Disagree	32	4%	126	20.60%
	Disagree	265	33%	150	24.50%
	Neither Agree nor Disagree	304	37.9%	142	23.20%
	Agree	173	21.5%	130	21.20%
	Strongly Agree	29	3.6%	64	10.50%
I don't feel the OPS are always appropriate	Strongly Disagree			60	9.80%
	Disagree			127	20.80%
	Neither Agree nor Disagree			159	26%
	Agree			191	31.20%
	Strongly Agree			75	12.30%
My perceptions of the GOsC are based on: What I hear from professional colleagues	Strongly Disagree	25	3.10%	43	7%
	Disagree	101	12.60%	65	10.60%
	Neither Agree nor Disagree	139	17.30%	104	17%
	Agree	479	59.70%	301	49.20%
	Strongly Agree	59	7.30%	99	16.20%

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
My perceptions of the GOsC are based on: - What I learned about the GOsC when I was training to be an osteopath	Strongly Disagree			145	23.70%
	Disagree			107	17.50%
	Neither Agree nor Disagree			155	25.30%
	Agree			149	24.30%
	Strongly Agree			56	9.20%
My perceptions of the GOsC are based on: My experience of the GOsC	Strongly Disagree	15	1.9%	17	2.80%
	Disagree	56	7%	40	6.50%
	Neither Agree nor Disagree	214	26.7%	152	24.80%
	Agree	404	50.3%	241	39.40%
	Strongly Agree	114	14.2%	162	26.50%
My perceptions of the GOsC are based on: The GOsC's communications to me and other osteopaths	Strongly Disagree	5	0.60%	8	1.30%
	Disagree	33	4.10%	35	5.70%
	Neither Agree nor Disagree	176	21.90%	90	14.70%
	Agree	501	62.40%	347	56.70%
	Strongly Agree	88	11%	132	21.60%
In the past 6 months, I have worried that things I have done as an osteopath may not comply with the OPS	Strongly Disagree	9	5.30%	186	30.40%
	Disagree	35	20.60%	164	26.80%
	Neither Agree nor Disagree	36	21.20%	113	18.50%
	Agree	83	48.80%	120	19.60%
	Strongly Agree	7	4.10%	29	4.70%
I comply with the OPS because they reflect what it means to be a good osteopath	Strongly Disagree	50	6.20%	68	11.10%
	Disagree	231	28.80%	116	19%
	Neither Agree nor Disagree	304	37.90%	165	27%
	Agree	197	24.50%	192	31.40%
	Strongly Agree	21	2.60%	71	11.60%
I have worried that things I have done as an osteopath may not comply with the OPS	Strongly Disagree	91	11.30%	62	10.10%
	Disagree	332	41.30%	198	32.40%
	Neither Agree nor Disagree	198	24.70%	161	26.30%
	Agree	172	21.40%	158	25.80%
	Strongly Agree	10	1.20%	33	5.40%

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
The OPS are helpful to inform my practice	Strongly Disagree			50	8.20%
	Disagree			94	15.40%
	Neither Agree nor Disagree			191	31.20%
	Agree			217	35.50%
	Strongly Agree			60	9.80%
I use the OPS to inform what I do	Strongly Disagree			36	5.90%
	Disagree			91	14.90%
	Neither Agree nor Disagree			193	31.50%
	Agree			228	37.30%
	Strongly Agree			64	10.50%
I fully understand the GOsC's process for handling complaints made against osteopaths by patients or the public	Strongly Disagree	45	5.60%	99	16.20%
	Disagree	176	21.90%	176	28.80%
	Neither Agree nor Disagree	236	29.40%	123	20.10%
	Agree	305	38%	150	24.50%
	Strongly Agree	41	5.10%	64	10.50%
I am confident that the GOsC's disciplinary procedures produce fair outcomes	Strongly Disagree	55	6.80%	158	25.80%
	Disagree	136	16.90%	176	28.80%
	Neither Agree nor Disagree	425	52.90%	179	29.20%
	Agree	177	22%	81	13.20%
	Strongly Agree	10	1.20%	18	2.90%
I believe the OPS reflect what it means to be a good osteopath	Strongly Disagree	23	2.90%	101	16.50%
	Disagree	144	17.90%	125	20.40%
	Neither Agree nor Disagree	283	35.20%	232	37.90%
	Agree	310	38.60%	123	20.10%
	Strongly Agree	43	5.40%	31	5.10%
I have changed what I do as an osteopath as a consequence of the introduction of the new OPS	Strongly Disagree	81	10.10%	120	19.60%
	Disagree	305	38%	172	28.10%
	Neither Agree nor Disagree	248	30.90%	168	27.50%
	Agree	152	18.90%	116	19%
	Strongly Agree	17	2.10%	36	5.90%

Question	Answer	Freq 2014	% 2014	Freq 2020	% 2020
I always think about the OPS whenever I am treating patients	Strongly Disagree	98	12.20%	75	12.30%
	Disagree	293	36.50%	136	22.20%
	Neither Agree nor Disagree	232	28.90%	162	26.50%
	Agree	167	20.80%	193	31.50%
	Strongly Agree	13	1.60%	46	7.50%

Mean responses to additional 2014 and 2020 questions with standard deviations in brackets

Question	2014 Mean (SD)	2020 Mean (SD)	Difference
I am mindful of the OPS when treating patients	n/a	3.91 (1.04)	n/a
Regulation by the GOsC is undermining the quality of osteopathy	n/a	3.20 (1.32)	n/a
Complying with the OPS restricts my ability to provide care that I believe would benefit patients	2.88 (.91)	2.76 (1.28)	-.12*
I don't feel OPS are always appropriate	n/a	3.15 (1.18)	n/a
My perceptions of the GOsC are based on: What I hear from professional colleagues	3.56 (.91)	3.57 (1.01)	.01
My perceptions of the GOsC are based on: What I learned about the GOsC when I was training to be an osteopath	n/a	2.78 (1.30)	n/a
My perceptions of the GOsC are based on: My experience of the GOsC	3.68 (.87)	3.80 (.99)	.12*
My perceptions of the GOsC are based on: The GOsC's communications to me and other osteopaths	3.79 (.71)	3.92 (.83)	.13*
In the past 6 months, I have worried that things I have done as an osteopath may not comply with the OPS	3.26 (1.01)	2.42 (1.24)	-.84*
I comply with the OPS because they reflect what it means to be a good osteopath	2.89 (.94)	3.13 (1.18)	.24*
The OPS are helpful to inform my practice	n/a	3.23 (1.08)	n/a
I use the OPS to inform what I do	n/a	3.32 (1.04)	n/a
I fully understand the GOsC's process for handling complaints made against osteopaths by patients or the public	3.15 (1.00)	2.84 (1.26)	-.31*
I am confident that the GOsC's disciplinary procedures produce fair outcomes	2.94 (.84)	2.39 (1.09)	-.55*
I believe the OPS reflect what it means to be a good osteopath	3.26 (.91)	2.77 (1.10)	-.49*
I have changed what I do as an osteopath as a consequence of the introduction of the new OPS	2.65 (.97)	2.63 (1.17)	-.02
I always think about the OPS whenever I am treating patients	2.63 (1.00)	3.00 (1.15)	.37*

We note a rise in the mean response among osteopaths reporting that their perceptions of the GOsC are based upon experiences of the GOsC and communications from the GOsC (78% agreed or strongly agreed in 2020 vs 73% in 2014), whereas the mean reporting that this is based upon what they hear from professional colleagues remains unchanged (with 65% agreeing or strongly agreeing in 2020).

We also note a very significant rise in the mean for osteopaths reporting that they always think about the OPS when they are treating a patient (39% agreeing or strongly agreeing vs only 22% in 2014). However, we note a very significant drop in osteopaths agreeing or strongly agreeing that the OPS reflect what it means to be a good osteopath (only 25% now agree vs 44% in 2014) too. Paradoxically, we also note a significant rise in osteopaths saying they comply with the OPS because they reflect what it means to be a good osteopaths (43% agree or strongly agree in 2020; although this compares to 61% agreeing or strongly agreeing that they comply with the OPS to avoid getting into trouble with the GOsC).

Finally, we note a very significant drop in osteopaths' reported understanding of and confidence in GOsC's complaints and disciplinary processes. In 2020, only 35% (vs 43% in 2014) agree or strongly agree they 'fully understand the GOsC's process for handling complaints made against osteopaths by patients or the public'. Even fewer osteopaths (16% in 2020 vs 23% in 2014) agreed or strongly agreed that they are 'confident that the GOsC's disciplinary procedures produce fair outcomes', with 54% in 2020 (vs 27% in 2014) disagreeing or strongly disagreeing. The mean response for this question about disciplinary procedures significantly dropped from 2.94 in 2014 to 2.39 in 2020.

Appendix 2: Demographics of 2020 survey respondents

Gender of respondents (N; % in parenthesis)

Male	318 (52%)
Female	252 (41%)
Prefer not to say, other or didn't answer	42 (7%)

Note: A higher proportion of female respondents completed the 2020 survey compared to 2014, where 51% of respondents were male and 44% female (6% preferred not to say).

Ethnicity of respondents (N; % in parenthesis)

White British	428 (69.9%)
Other White Background	77 (12.6%)
White Irish	14 (2.3 %)
Indian	9 (1.5%)
Other Mixed Background	5 (.8%)
White and Asian	4 (.7%)
Other Ethnic Group	3 (.5%)
Chinese	2 (.3%)
Pakistani	2 (.3%)
Caribbean	2 (.3%)
Other Asian Background	2 (.3%)
White and Black Caribbean	2 (.3%)
Arab	1 (.2%)
African	1 (.2%)
White African	1 (.2%)
Did not want to say	59 (9.7%)

Respondents by age (N; % in parenthesis)

Under 30 years old	59 (9.6%)
30-39 years old	113 (18.5%)
40-49 years old	154 (25.2%)
50-59 years old	180 (29.4%)
60 or more years old	94 (15.4%)

Note: The average age of participants was 47 years old (the same as in the 2014 survey), with the oldest respondent 77 years old.

Respondents by years qualified as an osteopath (N; % in parenthesis)

<5 years	100 (16.3%)
5-14 years	186 (30.4%)
15-24 years	149 (24.3%)
25+ years	170 (27.7%)

Note: The average number of years participants had been qualified was 17 years (the same as in the 2014 survey).

Osteopathic Education Provider graduated from (N; % in parenthesis)

British School of Osteopathy/College of Osteopathy	294 (48%)
British College of Osteopathic Medicine	80 (13.1%)
The European School of Osteopathy	81 (13.2%)
London School of Osteopathy	41 (6.7%)
The College of Osteopaths	34 (5.6%)
Oxford Brookes University	27 (4.4%)
Nescot	16 (2.6%)
Swansea University	11 (1.8%)
Leeds Beckett University	7 (1.1%)
London College of Osteopathic Medicine	5 (.8%)
Other	23 (3.8%)

Note: some osteopaths did qualifications in more than one OEI.

Respondents' qualifications (N; % in parenthesis)

DO	207 (33.8%)
BSc	193 (31.5%)
Most	170 (27.8%)
BOst	72 (11.8%)
MSc	70 (11.4%)
BOstMed	19 (3.1%)
PhD	7 (1.1%)
Member of LCOM	4 (.7%)
Other	62 (10.1%)

Note: some osteopaths indicated more than one qualification.

Breakdown by approach to osteopathic practice (N; % in parenthesis)

Mixed, using a range of structural and cranial/functional techniques	294 (48%)
Predominantly structural	272 (44.4%)
Predominantly cranial/functional	38 (6.2%)
Did not answer	8 (1.3%)

Breakdown by working alone or alongside others (N; % in parenthesis)

Work alongside other osteopaths and/or healthcare professionals	338 (55.2%)
Work alone	152 (24.8%)
Work both alone and alongside other healthcare professionals	115 (18.8%)
Did not answer	7 (1.1%)

Breakdown by work setting (N; % in parenthesis)

Independent or private practice	595 (97.2%)
NHS or public sector	32 (5.2%)
Education Sector	97 (15.8%)
Other	11 (1.8%)

Note: Some respondents reported working in more than one setting.

Respondents by region (N; % in parenthesis)

South East	160 (26.1%)
London	159 (26%)
South West	73 (11.9%)
Midlands	61 (10%)
East Anglia	47 (7.7%)
North West	28 (4.6%)
Scotland	26 (4.2%)
North East	22 (3.6%)
Wales	19 (3.1%)
Northern Ireland	3 (.5%)
Other	30 (4.9%)

Leading and managing other health professionals (N; % in parenthesis)

170 (27.8%) respondents said they lead or manage other health professionals

Reported prevalence of complaints to the GOsC (N; % in parenthesis)

55 (9%) respondent reported having had a complaint made against them to the GOsC.

References

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