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The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom

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Abstract

Objectives: the primary aim was to investigate the impact of complaints on the psychological welfare and health of doctors. The secondary aim was to assess whether doctors report exposure to a complaints process is associated with defensive medical practice.

Design: cross-sectional anonymous survey study. Participants were stratified into recent/current, past, or no complaints. Each group completed tailored versions of the survey.

Participants: 95,636 doctors were invited to participate. 10,930 (11.4%) responded. 7,926 (8.3%) completed the full survey and were included in the complete analysis.

Main outcome measures: anxiety and depression were assessed using the standardised Generalised Anxiety Disorder scale and Physical Health Questionnaire. Defensive medical practice was measured using a new measure. Single-item questions measured stress-related illnesses, complaints-related experience, attitudes towards complaints, and views on improving complaints processes.

Results: 16.9% of doctors with current/recent complaints reported moderate/severe depression (relative risk (RR) 1.77 (1.48, 21.3) compared to doctors with no complaints). 15% reported moderate/severe anxiety (RR= 2.08, 95% CI=1.61, 2.68). Distress increased with complaint severity, with highest levels after General Medical Council (GMC) referral (26.3% depression, 22.3% anxiety). Doctors with current/recent complaints were 2.08 (1.61, 2.68) times more likely to report thoughts of self-harm or suicidal ideation. Most doctors reported defensive medical practice: 82-89% hedging and 46-50% avoidance. 20% reported feeling victimized after whistleblowing, 38% feeling bullied. 27% spent more than a month off work. Over 80% felt processes would improve with transparency, managerial competence, capacity to claim for lost earnings and act against vexatious complainants.

Conclusions: doctors with recent/current complaints have significant risks of moderate/severe depression, anxiety, and suicidal ideation. Morbidity was greatest in cases involving the GMC. Most doctors reported practicing defensively including avoidance of procedures and high-risk patients. Many felt victimised as whistleblowers or bullied in relation to complaints. Factors cited to improve complaints processes included transparency and managerial competence.

Strengths and limitations of this study

Strengths

- One of the largest reported on this subject with 10,930 respondents and 7,926 completing the survey
- Respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions.

- We have obtained quantitative data on mental wellbeing using validated questionnaires.

Limitations

- The main limitation of the study was the overall response rate of 11.4%. Accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. On the other hand doctors were being asked to comment on their regulators, and those most traumatised by the complaints process may have avoided engaging with the survey. Doctors who have been erased from the register or changed profession would not have been contacted.
- The cross-sectional design does not enable causation to be elucidated
- We collected responses from doctors who have not experienced a complaint but observed the impact on others. This means that the “no complaints” group may have more psychological morbidity than if doctors could be isolated from complaints processes completely. This may result in relative risks in the paper being underestimated.
- Some questions involved remembering past events and the possibility of recall bias must also be considered.
- There were missing responses for a number of questions. However this was dealt with using multiple imputation. However we are reassured that no major differences between the conclusions that would be drawn using complete cases compared to those where data was missing and imputed were found.

Introduction

It was recently disclosed that 96 doctors have died since 2004 while involved in General Medical Council (GMC) fitness to practice proceedings, information that came to light following a freedom of information request by the group doctors4justice. In parallel to this, between 2011 and 2012 the number of doctors referred to the GMC increased by 18%¹. Most doctors referred to the GMC have their case closed at triage or have no action taken². In a recent article in the British Medical Journal (BMJ), Clare Dyer described some of the harrowing consequences for some doctors who have been through a GMC investigation³.

However the GMC represents only the tip of the iceberg in terms of the complaints system. These include both internal trust investigations, the possibility of a serious untoward incident (SUI) enquiry as well as disputes with managers and colleagues. Whilst there are some data relating to how doctors respond to GMC investigations, to our knowledge there are no studies addressing the issue of complaints procedures below this level. For many doctors, the prospect of facing a complaint or professional dispute causes them significant stress. This can manifest itself in how they perform in clinical practice and/or in their personal life, and may lead to both physical and psychological symptoms.

Clearly complaints and investigations when things go wrong are part of the checks and balances that should ensure appropriate oversight of a doctor's performance, the overall aim being to protect patients and maintain appropriate clinical standards. However the regulatory burden and stress associated with a complaints process may not lead to the outcomes that are desired.

In a previous study of surgeons surveyed in the United States (US), malpractice litigation was significantly associated with burnout, depression and suicidal ideation⁴. There are also data to suggest that medical errors are associated with burnout, depression and loss of empathy in the physician responsible⁵. None of these outcomes are likely to lead to improvements in patient care. A further study has shown suicidal ideation in over 6% of US surgeons, over twice the background rate in the population. In this study, burnout, depression, and involvement in a recent medical error were strongly and independently associated with suicidal ideation after controlling for other

personal and professional characteristics. Most surgeons in this study were reluctant to seek professional help due to concerns that there may be an impact on their career⁶.

In a study published in the BMJ, Jain and Ogden described the impact of patient complaints on general practitioners in the United Kingdom and reported an association with anger, depression and suicide⁷. It is also important to note they also described clinicians involved in complaints practicing medicine more defensively, losing confidence, offering a less appropriate service and planning to leave the profession. None of these outcomes can be considered likely to improve patient care and safety. It must be remembered that the GMC itself describes its core function as being to protect patients. So if the complaints system leads to doctors practicing overly defensive medicine, with avoidance of difficult cases and over-investigation of patients, then the entire process may lead to more harm than good in terms of patient care.

Aspects of the complaints process itself may also contribute stressors including the length of time an investigation may take and not knowing whether the case will progress. The adversarial nature of investigations and hearings is a further contributor together with a sense of isolation that many doctors feel. In addition there is uncertainty over the impact on the doctor's career and often a lack of knowledge of the process. This combination of factors may lead to physical and mental health problems. The GMC has acknowledged that there is stress associated with their procedures and commissioned the British Medical Association (BMA) Doctors for Doctors service to provide confidential emotional support to doctors going through fitness to practice proceedings.

The primary aim of this study was to investigate the psychological welfare of doctors who have observed or experienced both past and/or current complaints. The secondary aim of the study was to assess whether being involved in or witnessing a complaints process leads to doctors reporting that they practice medicine defensively.

Methods

Design

The study used a cross-sectional survey design where participants were streamed into three groups: current/recent complaint (on-going or resolved within the last 6 months), past complaint (resolved more than 6 months ago), and no complaints. Each group completed a slightly different version of the questionnaire. Participants in the current complaints and no complaints group were asked about their current mood and health whereas the past complaints group were also asked to respond about their mood and health at the time of the complaint.

Ethical approval was obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Participants

Members of the BMA in November 2012 who had pre-consented to being contacted for research purposes were invited to participate (n=95,636). They were emailed a link to an online encrypted questionnaire using Survey Monkey® and an information sheet describing the study. Participants were guaranteed that their responses were anonymous and untraceable. The survey remained open for two weeks and three reminders were sent out about the study during this time. A total of 10,930 (11.4%) participants responded to the survey. Of these, 696 (6.4%) were excluded as they only completed the demographics section, and 121 (1.1%) participants were excluded because a technical error meant that they were given the wrong sections to complete. A further 2187 (20.0%) participants completed the demographics section and indicated whether they had had a complaint and they were partially included in the analysis (sample 1). A total of 7926 (72.5%) participants completed the survey (sample 2). Of these, 1380 omitted some sections of the survey but were included in the full analysis. Demographic information in relation to both samples is shown in table 1.

In order to check that our sample was representative, we compared our study population with the total BMA membership database (see table 1). This showed that our sample was broadly representative in terms of gender (46.3% females in the BMA membership database compared to 47.5% females in both sample 1 and 2) and place of qualification (80.1% qualified in the United Kingdom in the BMA population compared to 80.7% in sample 1 and 81.2% in sample 2). Our study population consisted of more doctors in the 35-59 age range (49.8% in the BMA population compared to 74.8% in sample 1 and 73.4% in sample 2), ethnic minorities were under-represented (32.4% in the BMA population compared to 22.4% in sample 1 and 21.8% in sample 2), and consultants and GPs were over-represented (27.2% were consultants and 26% were GPs in the BMA population compared to 37.1% and 38.4% in sample 1 and 36.5% and 37.8% in sample 2) whilst junior doctors and retired doctors were underrepresented (26.4% were juniors and 8.6% were retired in the BMA population compared to 15.7% and 0.7% in sample 1 and 16.5% and 0.7% in sample 2).

Measures

A pilot of the questionnaire trialed on 20 medical doctors of varying grades and specialties and their feedback was incorporated in the questionnaire design (see details below).

Having completed 13 items obtaining demographic information (including age, specialty, gender, marital status, ethnicity, place of training, marital status, and details about their employment), participants were separated into three streams based on whether they had i) a current/recent complaint (within the past 6 months), ii) past complaint, or iii) no current or past complaints.

All participants completed the following sections (although some individual items varied in the different streams):

Experience of complaint: Participants in both complaints groups were asked 75 questions about their complaint(s) generated from Bark and colleagues⁸ and the pilot

study. This included their total number of complaints, the most significant complaint and followed by a series of questions about the most serious complaint if they had had more than one, including the reason for the complaint, the origin, the duration, the outcome, the cost (i.e. any leave taken, the estimated financial cost), and the level of support sought and obtained during the complaint. Participants who had been referred to the GMC were also asked to rate how stressful they found each aspect of the procedure. Whilst the majority of the questions used a 5-point scale, some questions were qualitative and a few were yes/no.

Attitudes towards complaints: All groups were asked ten questions using a 5-point scale generated from the pilot study about their attitudes toward complaints, the causes of complaints, and their perceived threat of future complaints. The no complaints group was asked 11 additional questions about their attitudes towards the complaints process (e.g., “I believe that complaints are reasonably dealt with”) and how well they perceive that they would be supported in the event of a complaint made against them (e.g., “If I had a complaint made against me, I am confident that my management would support me”).

Suggestions to improve the complaints process. All groups were asked to rate different suggestions on how to improve the complaints process on 11 5-point items. These proposals were generated from the pilot study.

Medical history: The presence of common stress-related illnesses at the time of the complaint or currently were measured using 12 items, including recurring infections, gastro-intestinal, sleep, cardio-vascular and mood problems^{9, 10}. In addition, questions were asked about self-reported drug and alcohol use, as well as life stressors at the time of both current and past complaints.

Defensive medical practice: Twenty items measuring current defensive medical practice were generated from a literature review^{10,11,12}. 12 items additional items were generated from the pilot study (5 for the no complaints group). Items were either rated on a 5-point scale or a yes/no response.

Depression: The *Physical Health Questionnaire (PHQ-9)*¹³ is a well-known standardised screening measure assessing the presence and severity of depression. It has been used across a wide range of populations and demonstrated good psychometric properties. Respondents were considered depressed if they scored 10 or more on the PHQ-9¹⁴.

Anxiety: The *Generalised Anxiety Disorder scale (GAD-7)*¹⁵ is a standardised screening measure assessing the presence and severity of generalized anxiety disorder. The GAD-7 is also moderately good at identifying panic disorder, social anxiety disorder, and post-traumatic stress disorder. It has been used across a wide range of populations and demonstrated good psychometric properties. Respondents were considered anxious if they scored 10 or more on the GAD-7¹⁵.

Life Satisfaction. Life satisfaction was assessed with 10 items using a 6-point scale asking about satisfaction-dissatisfaction with marriage, career, recreation/leisure, self/family, and life satisfaction/optimism.

Statistical analysis

For the purpose of this paper, we have limited ourselves to analysis of psychological welfare and health (i.e. anxiety, depression, stress-related illness), defensive practice, culture, time off work and suggestions for improving the complaints process. To summarise the fifteen items measuring defensive practice, an exploratory factor analysis was conducted which identified two underlying factors. The first involves over-investigation and overly cautious management, which we have termed “hedging” (9 items, including for example “carried out more tests than necessary”, “referred patient for second opinion more than necessary” and “admitted patients to the hospital when the patient could have been discharged home safely or managed as an outpatient”, Cronbach’s $\alpha=0.92$). The second involves avoiding difficult aspects of patient treatment, which we termed “avoidance” (3 items, “stopped doing aspects of my job”, “not accepting high risk patients in order to avoid possible complications”, and “avoiding a particular type of invasive procedure”, Cronbach’s $\alpha=0.77$). Due to strongly skewed distributions, the sumscores hedging and avoidance were analysed both as dichotomous (any hedging (>0)/avoidance (>0) versus no hedging

(0)/avoidance (0)) and ordinal variables (never (0), rarely (hedging 1-12, avoidance 1-4), sometimes (hedging 13-24, avoidance 5-8) or often (hedging 25-36, avoidance 9-12) displaying hedging or avoidance behavior.)

The statistical analysis mainly consisted of descriptive analyses. Cross-tabulations of psychological welfare and defensive practice indicators have been made and relative risks were computed to investigate the relationship between complaint group and psychological welfare or defensive practice indicators. Additionally, means within the complaint groups and mean differences have been computed for continuous variables such as depression and anxiety. Asymptotic 95% confidence intervals were computed for relative risks and mean differences. Unpooled standard errors of the mean difference were used when necessary. Proportions and their 95% confidence intervals were also computed for feeling bullied during the investigation, feeling victimized because of whistle blowing and the amount of time spent off work. Proportions were computed to investigate the amount of support of respondents to various proposed actions to improve the complaints process.

As the primary aim of this study was to investigate the impact of complaints on the psychological welfare and health of doctors, a logistic regression analysis was performed to assess the relationship between moderate to severe depression and receiving a complaint, while controlling for predefined confounders (age, gender, being in a relationship, being White British, and medical specialty). Interactions of complaint with the confounders were included if necessary ($\alpha=0.001$). Proportional odds logistic models were constructed to investigate whether hedging or avoidance are associated with characteristics of the complaint process (length of investigation, timing of complaint, outcome of investigation, origin of the complaint, type of the complaint). For hedging and avoidance, all two-way interactions were of interest and were included if necessary ($\alpha=0.001$). We checked linearity assumptions, the presence of multi-collinearity, the presence of outliers, and the proportional odds assumption when necessary.

There was substantial item non-response. For key variables such as depression, anxiety, hedging and avoidance, non-response was approximately 20%. Missingness was addressed by performing multiple imputation using chained equations (MICE)¹⁶

with 10 iterations. Missing values were imputed 100 times, leading to 100 completed datasets. For depression, anxiety and hedging, a two-step approach to imputation was used to decrease the computational burden and make appropriate use of the available answers to separate items, first imputing the individual mean of non-missing items if at least 80% of the items of the composite scale were non-missing, followed by multiple imputation (MI) at the scale level for the remaining individuals. For avoidance, the three items were individually imputed. After MI, each completed dataset was analysed separately and results combined using standard Rubin's rules (Rubin, 1987). To assess the impact of item non-response, we performed a sensitivity analysis comparing the results of the complete case analysis to the results after MI, which assumes missingness at random. Additionally, MI assuming missingness not at random (informative missings) was considered for key variables depression, anxiety, hedging and avoidance¹⁷. Since these variables are based on responses to sensitive questions, informative missingness is plausible. As a missingness mechanism we assumed that those respondents with missingness might have been more anxious or depressed, or more likely to display hedging behavior or avoidance. More details on the MNAR analysis can be found in the supplementary file.

The data was analysed using SAS (version 9.3, SAS Institute, Cary, NC, USA). Multiple imputations were performed using IVEware (<http://www.isr.umich.edu/src/smp/ive/>)¹⁸.

Results

Psychological welfare and health

Overall, 16.9% of doctors with recent or ongoing complaints reported clinically significant symptoms of moderate to severe depression. Doctors in this group were at increased risk of depression compared to those with a past complaint or no personal experience of a complaint (Table 2; RR=1.77, 95% CI=1.48, 2.13). This was the case even when controlling for the effects of gender, age (cubic effect), being in a relationship (yes/no), being White British (yes/no), and medical specialty. The effect of having a recent or current complaint depends on gender. When there has been no complaint, men tend to be less likely to be depressed than women (OR=0.76, 95%

CI=0.54, 1.09), but a recent or current complaint has a higher impact on men than on women (OR women=1.72, 95% CI=1.28, 2.30; OR men=2.86, 95% CI 2.04, 4.01]. Within the PHQ-9, doctors with an ongoing or recent complaint were twice as likely as doctors with no complaints to report having thoughts of self-harm or suicidal ideation (RR=2.08, 95% CI=1.61, 2.68; see table 2). The sensitivity analysis shows that this conclusion holds under various assumed missingness mechanisms (see supplementary file 1, supplementary table 1).

Moreover, 15% of doctors in the recent complaints group reported clinically significant levels of anxiety on the GAD-7, which is twice as likely as doctors who have no complaints (see Table 2, RR= 2.08, 95% CI=1.61, 2.68). Also this conclusion holds under various assumed missingness mechanisms (see supplementary file 1, supplementary table 2).

The level of psychological distress was related to the type of complaints procedure. Doctors going through a GMC referral reported the highest levels of depression (26.3%), anxiety (22.3%) and thoughts of self-harm (15.3%) compared to SUIs (16.1%, 15.3% and 9.3% respectively), formal complaints (15.6%, 13.5% and 9.0%), and informal complaints (12%, 12% and 6.4%) (table 3).

When asked directly using a single item scale, doctors were 3.78 (95% CI=2.68, 5.32) times more likely to report the presence of suicidal thoughts whilst going through a current or recent complaint compared to doctors who had no complaints (table 4).

Doctors who have experienced either a recent or past complaint reported higher levels of health problems at the time of the complaint compared to the no complaint group. These included gastro-intestinal problems, subjective anxiety and depression, anger, other mental health problems, insomnia, relationship problems, and frequent headaches. Doctors in the current complaints group also reported higher levels of cardio-vascular problems (see table 4).

Defensive practice

Overall, 84.7% of doctors with a recent and 79.9% with a past complaint reported changing the way they practiced medicine as a result of the complaint. 72.7% of doctors with no previous complaint reported changing their practice having observed a colleague's experience of a complaint (see Table 5).

88.6% of doctors with a recent or current complaint and 82.6% of those with a past complaint displayed hedging behaviour. 81.7% of doctors with no previous complaints reported hedging. The sensitivity analysis revealed that under the MNAR assumption, the conclusion still holds that people in the recent or current complaint group display more hedging behavior than people in the no complaints group, but also people with a past complaint display considerably more hedging behavior (see supplementary file 1, supplementary table3).

49.8% of doctors with a recent or current complaint, 42.9% of doctors with a past complaint, and 46.1% of doctors with no personal experience of a complaint reported avoidance behaviour having observed a colleague's experience of a complaint. Although the results from the complete case analysis support the conclusion that mostly people in the recent and current complaint group display avoidance behaviour, the results from the analysis under the MNAR assumption suggest that it is people with a past complaint who display most avoidance behaviour (see supplementary file 1, supplementary table 4).

The multivariable proportional odds analysis indicated that the odds of more severe hedging are higher for people with a recent or ongoing complaint than for people with a past complaint (OR 1.33 95% CI=1.19, 1.49) (Table 6). The odds of hedging slightly increased with the length of time of the investigation (OR 1.01 per month, 95% CI=1.00, 1.01). Hedging was increased when retraining was imposed (OR 1.62, 95% CI=0.84, 3.13) and decreased when the doctor was suspended from practice (OR 0.56, 95% CI=0.26, 1.18). The odds of hedging also decreased when the complaint came from medical colleagues (OR 0.67, 95% CI=0.53, 0.86). There was evidence of an interaction between the type of the most serious complaint one has experienced and whether or not the complaint came from a patient (see supplementary figure 1). Hedging was higher when the complaint came from a patient, this was most clear for

informal (OR=3.16, 95% CI=2.17, 4.58) and formal complaints (OR=2.18, 95% CI=1.67, 2.85). When the complaint did not come from a patient, hedging was higher for formal complaints, SUI's and GMC referrals compared to informal complaints (OR=1.52, 95% CI=1.03, 2.24, OR=2.10, 95% CI=1.31, 3.35 and OR=1.78, 95% CI=1.15, 2.71, respectively).

As with hedging, the multivariable analysis indicated that the odds of more severe avoidance increased with the length of time the investigation (OR 1.01 per month, 95% CI=1.01, 1.02), and was higher for people with a recent or current complaint than for people with a past complaint (OR 1.20, 95% CI=1.07, 1.35) (Table 7). Avoidance was also increased when the investigation resulted in imposed retraining (OR 1.79, 95% CI=1.0, 3.09). Avoidance behaviour most severely increased when the complaint came from a patient group (OR 1.71, 95% CI=1.02, 2.87) or management (OR 1.59, 95% CI=1.16, 2.16), or when the complaint was anonymous (OR 1.58, 95% CI=1.06, 2.36). The type of complaint did not meaningfully influence the odds of more severe avoidance.

Overall, as a result of their experience of the complaints process, 23% of doctors reported suggesting invasive procedures against their professional judgement, and 14% reported becoming more likely to abandon a procedure at an early stage.

Culture and time off work

20% (95% C.I. 19% to 22%) reported that they felt victimized because they had been a whistleblower for clinical or managerial dysfunction. 38% (95% C.I. 37% to 40%) of people who have had a complaint, recently or in the past, reported feeling bullied during the investigation.

60% (95% C.I. 57% to 64%) spent less than a week off work. However, 27% (95% C.I. 24% to 30%) of people with complaints spent more than a month off work.

Opinions on changes to improve the system

Of those doctors that gave a response, 85% felt that for managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them mattered quite a lot or a great deal in terms of improving the process. An equal number (85%) felt that if a doctor is exonerated but has suffered financial loss during the process, then they should have the option to make a claim for recovery of lost earnings or costs and in addition that there should be complete transparency of any management communication about the subject of a complaint and that access to such communications should be given to a doctor’s representatives. 74% of respondents felt that it mattered quite a lot or a great deal that if a complaint from a clinical or managerial colleague was found to be vexatious then this could be investigated and possible disciplinary measures taken. The full details of responses in relation to actions that could be taken to reduce the psychological impact of complaints processes are shown in supplementary table 5.

Discussion

We have shown that doctors who responded to our questionnaire who have recently received a complaint of any kind are 77% more likely to suffer from moderate to severe depression than people who have never had a complaint. They also have double the risk of having thoughts of self-harm, and double the risk of anxiety. Welfare is lowest when the complaint involves referral to the GMC. Doctors with a recent or current complaint also reported that they suffered from an increased likelihood of cardiovascular and gastro-intestinal disorders, depression, anxiety, anger and irritability, suicidal thoughts, sleep difficulty, relationship problems, and frequent headaches than people who had not been through a complaints process. In many cases these problems persisted. We have also shown that 80% of doctors answering the survey reported changing the way they practiced as a result of either complaints against themselves, or after observing a colleague go through a complaints process. The majority (84%) of doctors reported hedging behaviour in response to a complaint (i.e. increased defensive practice) whilst many (46%) admitted avoidance. A further important finding was that many doctors who had a complaint (20%) felt they were victimised after whistle blowing. Thirty-nine percent reported that they felt bullied when they were going through the process. A large number of doctors had significant time off work as a result of a complaint with 27% spending more than a month off work.

A strength of the study is that to our knowledge it is one of the largest reported on the subject involving 10,930 respondents with 7,926 completing the survey. It is certainly the largest relating to doctors in the United Kingdom. We also think it is critical that respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions. Furthermore we have obtained quantitative data on the mental wellbeing of doctors using validated questionnaires. It is also important to note that we have collected responses from doctors who have not experienced a complaint but observed the impact on others. On the one hand this gives insight into the impact of observing a colleague going through a complaints process, however it also means that the “no complaints” group may have a higher overall level of psychological morbidity than if doctors could be isolated from complaints processes completely. Hence the relative

risks in the paper may be underestimated. A significant limitation of the study is that the response rate was 11.4%, accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. What constitutes an acceptable response rate is a subject of debate, however our response rate is clearly low¹⁹. We believe this is inevitable when asking doctors to comment on disciplinary processes and in particular on their regulator. Even if we take the view that the respondents are a selected group, they still demonstrate that a very considerable number of doctors are significantly impacted by complaints processes and practice defensively. It must also be remembered that doctors that have been most traumatised by the complaints process may have felt unable to take part in the survey and a small number are known to have committed suicide. Furthermore those no longer on the register (for example if they have changed profession or erased from the register) are unlikely to be members of the BMA and so would not have been contacted. As some questions involved remembering past events the possibility of recall bias for some answers must also be considered. For a number of questions there were missing responses. However we have considered this issue by using multiple imputation and were reassured that we found no essential differences between the conclusions that would be drawn using complete cases compared to those where missing data have been imputed.

As with any cross-sectional survey we must be careful when considering the findings, as we cannot show causation. It is possible that doctors with depression, anxiety and suicidal ideation are more likely to have complaints made against them, similarly being complained against may be the causative factor rather than the processes themselves. However this still means the information presented is important as if we take the former view, it means those going through complaints processes are a vulnerable group that need support.

It is interesting that our findings are similar to a questionnaire-based study of surgeons in the United States examining the emotional toll of malpractice lawsuits. This study found significantly more depression and burnout in surgeons who had recently been exposed to a lawsuit and highlighted the association between burnout and the likelihood of making a medical error⁴.

We found that 10% of doctors responding to the survey who have had a recent complaint have had thoughts of self-harm and are over twice as likely to have had

such thoughts compared to doctors who had not personally experienced a complaint. When referral to the GMC is looked at in isolation the number of doctors who reported suicidal ideation reached 15.3%, whilst 26.3% had moderate to severe depression and 22.3% had moderate to severe anxiety on the basis of two validated instruments. Even set against the limitations of the study we have highlighted above, these findings are concerning. In a recent feature article in the BMJ, Dyer reported on the high number of suicides associated with GMC proceedings³. Our results support the view that these proceedings have a disproportionate impact on doctors, especially as the vast majority of doctors who are referred to the GMC are found to have no significant case to answer². However the GMC is at the apex of what amounts to a “complaints pyramid” and our data show similar significant psychological morbidity for doctors when they are involved both in internal trust enquiries into complaints and in the event of a serious untoward incident investigation.

The incidence of feeling victimized following whistleblowing (20%) and bullying (38%) will be a concern to those trying to build a culture in the NHS where it is safe to speak out about clinical and managerial concerns. The Francis report highlighted the dysfunctional culture that is prevalent in many NHS organisations²⁰. Other recent reports have also highlighted serious concerns about the pressures that may be placed on hospital staff²¹. Given the large numbers involved, our study supports the view that whistleblowing in the NHS is not always a safe action to take, that bullying is not uncommon, and that this problem is not just experienced in isolated cases.

The GMC exists to protect patients and the public. This is also the aim of other types of complaints processes with the overall purpose being to learn from mistakes and improve the performance of everyone taking part in patient care. However as with all interventions there may be unforeseen consequences. Previously Jain et al in a qualitative study reported that many general practitioners practice defensively following a complaint⁷. Our data also show the vast majority of doctors who took part in the study reported engaging in defensive practice. This involved hedging and avoidance behavior; which included carrying out more tests than necessary, over-referral, over-prescribing, avoiding procedures, not accepting high-risk patients and abandoning procedures early. These behaviors are not in the interest of patients and may cause harm, whilst they may also potentially increase cost to the wider NHS. By

far the majority of doctors who are reported to the GMC are not found to have a significant case to answer², as is probably the case with other lower level complaint investigations. It therefore does not seem unreasonable to argue that as they currently function, GMC enquiries may do more overall harm than good in terms of patient care. As the “complaints pyramid” is descended it is possible this balance may improve, although we found defensive practice across the entire spectrum of complaints processes.

Whilst we fully acknowledge the limitations associated with any study of this type, we believe our findings have implications for policy makers. Procedures must exist to enable patients to make a complaint about their care, for professionals to raise concerns about standards or practice and for untoward events to be investigated. However a system that is associated with high levels of psychological morbidity amongst those going through it is not appropriate as either the subjects of such procedures are vulnerable at the outset or are suffering such morbidity as a direct result of the investigations themselves. Most importantly, a system that leads to so many doctors practicing defensive medicine is not good for patients. The high level of suicidal ideation coupled with the recent revelations about suicide amongst doctors who have been reported to the GMC is a concern³. Recently the GMC announced a review of cases of doctor suicide associated with GMC investigations, and introduced offering emotional support to doctors going through fitness to practice procedures. A survey has also been sent out by the GMC to doctors to hear their views. These initiatives are welcome, but whether doctors will feel confident in giving critical feedback to the GMC is open to question. No such initiatives have been made to support doctors involved in other processes outside GMC proceedings, whilst our data suggest that psychological morbidity as well as hedging and avoidance behaviour is associated with the entire spectrum of complaints procedures. A further concern for patient care is the association between doctor’s distress, burnout and decreased empathy with perceived medical errors²¹.

When asked how the complaints process could be improved doctors indicated that what mattered to them was that the process should be transparent and that managers responsible for complaints should be up to date and competent. There was also a clear feeling that in the event of a complaint being shown to be vexatious then there should

be disciplinary consequences if this related to managers and hospital staff, or the option for financial redress in the event it related to patients. Doctors indicated that in the event of a complaint they expected any procedure to be clear, transparent, follow due process and in the event that the complaint was shown to be vexatious, that there are consequences for those involved. Concerns about the lack of redress associated with vexatious complaints have been raised in the BMJ before²³. The logical extension of increased transparency and greater training and therefore competency amongst managers responsible for dealing with complaints would be consistency. Consistency in both the management and outcome of complaints would be valuable in restoring the sense of fairness that our results would suggest is not currently being perceived by doctors.

We have shown that doctors who responded to our questionnaire and experience or observe complaints processes exhibit high levels of psychological morbidity including severe depression and suicidal ideation. These effects are greatest when the process involves the General Medical Council. In addition the majority of these doctors exhibit hedging and avoidance, both these behaviours may be damaging to patient care and be contrary to the professed aims of these processes.

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Contributors

TB conceived of the original idea for the study, interpreted results, drafted the paper and is overall guarantor. MJ designed the questionnaire, interpreted results and contributed to drafts of the paper. LW and BVC carried out the statistical analysis and contributed to drafts of the papers. MP contributed to the study design, interpretation of results and commented on drafts of the paper. DT and CVA contributed to interpretation of results and commented on drafts of the paper. All authors approved the final version of the manuscript.

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Competing interests

All authors have completed the Unified Competing Interest form and declare: Michael Peters is head of the BMA doctors for doctors unit and so receives payment from the BMA. The BMA had no role in data collection, design of the study, data analysis, interpretation of data, or writing the report and had no influence over whether to submit the manuscript. All other authors stated that they had no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other relationships or activities that that could appear to have influenced the submitted work

Ethical approval

Ethical approval was sought and obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Transparency declaration

The lead author (T Bourne) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no aspects of the study have been omitted in relation to the specific aspects of the study reported in this paper; and that any discrepancies from the study as planned (and, if relevant registered) have been explained.

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Tables and Figures

Table 1: Demographic information relating to both sample 1 and 2 in the study

Age	Total BMA membership consented for research	Sample 1 (n=10113)	Sample 2 (n=7926)
Up to 25	17.8%	1.4%	1.4%
26-29	9.0%	5.1%	5.5%
30-34	9.6%	8.6%	8.8%
35-39	10.3%	11.0%	11.0%
40-44	10.3%	13.5%	13.1%
45-49	10.8%	16.9%	16.8%
50-54	10.3%	18.8%	18.8%
55-59	8.1%	14.6%	14.7%
60-64	5.0%	6.6%	6.4%
65-69	3.0%	2.5%	2.6%
Over 69	5.9%	1.1%	1.0%
Gender	46.3% Female	47.5% Female	47.5% Female
Place of qualification			
United Kingdom	80.1%	80.7%	81.2%
India	8.2%	6.6%	6.2%
Pakistan	2.2%	1.2%	1.2%
Ireland	0.9%	1.4%	1.4%
Nigeria	1.1%	1.2%	1.2%
Germany	0.7%	1.1%	1.2%
South Africa	0.7%	0.8%	0.8%
Other	6.2%	6.9%	6.9%
Ethnicity			
White British	67.6%	77.6%	78.2%
Asian or Asian British	23.3%	16.6%	15.8%
Black or Black British	3.5%	2.3%	2.3%
Chinese or Chinese British	2.9%	1.3%	1.3%
Mixed	2.7%	2.3%	2.3%
Grade:			

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Academics	2.1%	1.2%	1.3%
Consultants	27.2%	37.1%	36.5%
General Practice	26.0%	38.4%	37.8%
Junior Doctors	26.4%	15.7%	16.5%
SASC	5.3%	5.8%	6.11%
Retired	8.6%	0.7%	0.7%
Other or no answer	4.4%	1.0%	1.1%

Table 2. Symptoms severity and relative risk of psychological distress for each complaints group.

	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Depression (PHQ-9)						
Mean (SD) ^a	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
Thoughts of 'self-harm' n (%)	83 (4.7%)	221 (5.7%)	218 (9.7%)	522 (6.6%)	1.22 (0.93, 1.61)	2.08 (1.61, 2.68)
Anxiety (GAD-7)						
Mean (SD) ^b	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe anxiety n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 3. Psychological distress within the recent / on-going complaints group by complaint that had the most impact.

	Informal complaint n=362 (16.0%)	Formal Complaint n=1196 (53.0%)	SUI n=280 (12.4%)	GMC referral n=374 (16.6%)	No complaint n=1780 (22.5%)
Depression (PHQ-9)					
Mean (SD) ^a	4.2 (5.0)	4.8 (5.4)	5.1 (5.6)	6.6 (6.7)	3.7 (4.3)
Moderate to severe depression n (%)	45 (12.0%)	190 (15.6%)	46 (16.1%)	100 (26.3%)	169 (9.5%)
Thoughts of ‘self-harm’ n (%)	24 (6.4%)	110 (9.0%)	27 (9.3%)	58 (15.3%)	83 (4.7%)
Anxiety (GAD-7)					
Mean (SD) ^b	3.8 (4.3)	4.4 (4.7)	4.7 (5.1)	5.7 (5.7)	3.1 (3.8)
Moderate to severe anxiety n (%)	44 (12.0%)	165 (13.5%)	44 (15.3%)	85 (22.3%)	131 (7.3%)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 4. Psychosomatic health for each of the complaints group. Please note that the past complaints group used retrospective information asking about worsening or onset of symptoms at the time of the complaint, whereas the no and recent complaint groups were asked about the presence of symptoms in the last twelve months.

	No complaint n=1780 (22.5%)	Recent or current complaint n=2257 (28.5%)	Past complaint n=3889 (49.1%)	RR recent or current versus no complaint.
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	124 (7.0%)	280 (12.4%)	405 (10.4%)	1.78 (1.44-2.20)
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	217 (12.2%)	426 (18.9%)	934 (24.0%)	1.55 (1.32-1.82)
Depression	187 (10.5%)	490 (21.7%)	1148 (29.5%)	2.07 (1.74-2.45)
Anxiety	476 (26.7%)	1108 (49.1%)	3045 (78.3%)	1.84 (1.65-2.04)
Anger and irritability	358 (20.1%)	928 (41.1%)	2406 (61.9%)	2.04 (1.77-2.35)
Other mental health problems	12 (0.7%)	54 (2.4%)	256 (6.6%)	3.45 (1.80-6.60)
Suicidal thoughts	44 (2.5%)	211 (9.3%)	519 (13.4%)	3.78 (2.68-5.32)
Sleep problems / insomnia	479 (26.9%)	1137 (50.4%)	288 (74.1%)	1.87 (1.67-2.10)
Relationship problems	187 (10.5%)	458 (20.3%)	911 (23.4%)	1.94 (1.63-2.30)
Frequent headaches	242 (13.6%)	432 (19.2%)	1027 (26.4%)	1.41 (1.19-1.65)
Minor colds	492 (27.6%)	509 (22.5%)	5447 (14.0%)	0.82 (0.73-0.92)
Recurring respiratory infections	77 (4.3%)	143 (6.3%)	306 (7.9%)	1.47 (1.11-1.95)

Table 5 Defensive practice according to complaint group

Because of your/other's experiences with complaints, have you....	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Changed the way of practicing medicine n (%)	1294 (72.7%)	3106 (79.9%)	1912 (84.7%)	6312 (79.6%)	1.10 (1.06,1.14)	1.17 (1.13,1.21)
Displayed hedging behaviour n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
Displayed avoiding behaviour n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
Suggested invasive procedures against professional judgement n (%)	359 (20.2%)	902 (23.2%)	585 (25.9%)	1846 (23.3%)	1.15 (1.02,1.29)	1.29 (1.13,1.46)
Become more likely to abandon a procedure at an early stage n (%)	248 (14.0%)	515 (13.3%)	372 (16.5%)	1136 (14.3%)	0.95 (0.80,1.13)	1.18 (1.00,1.39)
Become less committed and worked strictly to job description n (%)	-	795 (20.5%)	613 (27.2%)		-	-

Table 6. Factors influencing hedging behaviour.

Odds Ratio Estimates for hedging			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.006	1.002	1.011
Recent or current complaint (versus past complaint)	1.331	1.193	1.485
Outcome of investigation			
No fault/ exonerated (yes versus no)	1.051	0.676	1.633
Retraining imposed (yes versus no)	1.622	0.913	2.885
Disciplinary action (yes versus no)	0.815	0.433	1.532
Suspended from practice (yes versus no)	0.557	0.289	1.075
Struck off from the register (yes versus no)	0.583	0.754	1.761
The process was not clearly concluded (yes versus no)	1.152	0.900	1.960
Where did the complaint come from			
Trust (yes versus no)	1.328	0.900	1.960
Medical colleagues (yes versus no)	0.672	0.526	0.860
Management (yes versus no)	0.797	0.581	1.094
Media (yes versus no)	1.084	0.467	2.515
Patient group (yes versus no)	1.495	0.906	2.464
Other health care professional (yes versus no)	1.047	0.798	1.375
Patient (yes versus no)			
For informal complaint	3.155	2.172	4.584
For formal complaint	2.180	1.670	2.846
For SUI	1.212	0.826	1.778
For GMC referral	1.670	1.207	2.311
Anonymous (yes versus no)	1.362	0.922	2.012
Type of complaint			
Formal complaint versus informal complaint			
Complaint did not come from a patient	1.521	1.034	2.239
Complaint came from a patient	1.051	0.903	1.223
SUI versus informal complaint			
Complaint did not come from a patient	2.097	1.311	3.352
Complaint came from a patient	0.805	0.648	1.002
GMC referral versus informal complaint			
Complaint did not come from a patient	1.776	1.164	2.709
Complaint came from a patient	0.940	0.757	1.168

Table 7. Factors influencing avoidance behaviour

Odds Ratio Estimates for avoiding			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.011	1.006	1.016
Recent or current complaint (versus past complaint)	1.201	1.069	1.350
Outcome of investigation			
No fault/ exonerated (yes versus no)	0.893	0.594	1.340
Retraining imposed (yes versus no)	1.787	1.033	3.092
Disciplinary action (yes versus no)	1.211	0.682	2.152
Suspended from practice (yes versus no)	1.066	0.566	2.008
Struck off from the register (yes versus no)	0.626	0.119	3.305
The process was not clearly concluded (yes versus no)	1.202	0.805	1.796
Where did the complaint come from			
Trust (yes versus no)	1.338	0.910	1.968
Medical colleagues (yes versus no)	1.439	1.134	1.826
Patient (yes versus no)	1.364	1.114	1.670
Management (yes versus no)	1.585	1.163	2.161
Media (yes versus no)	0.866	0.380	1.972
Patient group (yes versus no)	1.708	1.019	2.866
Other health care professional (yes versus no)	1.326	1.015	1.731
Anonymous (yes versus no)	1.580	1.057	2.360
Type of complaint			
GMC referral (versus informal complaint)	1.082	0.885	1.323
SUI (versus informal complaint)	1.112	0.904	1.368
Formal complaint (versus informal complaint)	1.036	0.893	1.203

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Supplementary material sensitivity analysis and supplementary tables 1-4

Sensitivity Analysis.

As a last step in the analysis, we performed a sensitivity analysis considering also missingness not at random (MNAR) for some of the key analyses. MNAR means that, even accounting for all the available observed information, the reason for observations being missing still depends on the unseen observations themselves. We performed a simple sensitivity analysis, assuming as a not ignorable missing model that depression, anxiety, hedging and avoiding are worse when the value is missing. Therefore, after multiple imputation under the MAR assumption using MICE, I increased each imputed value of depression (PHQ9) and anxiety (GAD7) by a certain number d . This number d was obtained as follows. First, a random number δ was sampled from a normal distribution with mean the estimated standard deviation of the distribution of PHQ9/GAD7, and standard deviation the square root of this value. Then $d=\max(\delta, 1)$, such that d is restricted to imply an increase in PHQ9/GAD7. Therefore, d instead of δ is added to the imputed value under missingness at random (MAR). After this, the new imputed value is rounded and bound at the maximum possible value, such that an integer number on the original scale is obtained. For hedging/avoiding, all missings were assumed to have displayed at least some hedging/avoiding behaviour. The actual score on the scale is irrelevant, because the scale is dichotomised prior to the analysis. After the imputations under MNAR are computed, analysis proceeds as usual, using Rubin's rules to combine results.

Supplementary table 1: Sensitivity analysis for PHQ-9

Depression (PHQ-9)^a	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	255 (14%)	1144 (29%)	214 (9%)	1613 (20%)		
Complete case						
Mean (SD)	3.8 (4.5)	3.4 (4.6)	5.2 (5.8)	4.1 (5.0)	-0.4 (-0.7, 0.1)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	160 (10.5%)	254 (9.3%)	363 (17.8%)	777 (12.3%)	0.88 (0.73, 1.06)	1.69 (1.42, 2.02)
MI MAR						
Mean (SD)	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
MI MNAR						
Mean (SD)	4.3 (4.6)	4.7 (4.8)	5.4 (5.7)	4.8 (5.1)	0.4 (0.1, 0.7)	1.1 (0.8, 1.4)
Moderate to severe depression n (%)	238 (13.4%)	593 (15.2%)	432 (19.2%)	1263 (15.9%)	1.14 (0.95, 1.35)	1.43 (1.21, 1.70)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

Supplementary table 2: Sensitivity analysis for GAD-7

Anxiety (GAD7) ^b	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	258 (14%)	1148 (30%)	201 (9%)	1607 (20%)		
Complete case						
Mean (SD)	3.2 (3.9)	3.0 (4.0)	4.7 (5.0)	3.6 (4.4)	-0.2 (-0.4, 0.1)	1.5 (1.2, 1.8)
Moderate to severe depression n (%)	123 (8.1%)	194 (7.1%)	330 (16.1%)	647 (10.2%)	0.88 (0.71, 1.09)	1.99 (1.63, 2.42)
MI MAR						
Mean (SD)	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)
MI MNAR						
Mean (SD)	3.7 (4.1)	4.3 (4.4)	4.9 (5.0)	4.3 (4.6)	0.5 (0.2, 0.9)	1.2 (0.9, 1.5)
Moderate to severe depression n (%)	173 (9.7%)	463 (11.9%)	374 (16.6%)	1011 (12.75%)	1.22 (0.98, 1.51)	1.71 (1.35, 2.18)

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Supplementary table 3: Sensitivity analysis for hedging.

Because of your / other's experiences with complaints, have you ever displayed hedging behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	268	1241	273	1782		
Complete case						
n (%)	1222 (80.8%)	2135 (80.6%)	1752 (88.3%)	5109 (83.1%)	1.00 (0.97,1.03)	1.09 (1.06,1.13)
MAR						
n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05, 1.11)
MI MNAR						
n (%)	1484 (83.4%)	3369 (86.6%)	2023 (89.6%)	6876 (86.8%)	1.04 (1.01,1.06)	1.08 (1.05,1.10)

Supplementary table 4: Sensitivity analysis for avoidance.

Because of your / other's experiences with complaints, have you ever displayed avoiding behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	242	1222	257	1721		
Complete case						
n (%)	705 (45.8%)	1137 (42.6%)	995 (49.8%)	2837 (45.7%)	0.93 (0.87,1.00)	1.09 (1.01,1.16)
MAR						
n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
MI MNAR						
n (%)	947 (53.2%)	2359 (60.7%)	1252 (55.5%)	4558 (57.5%)	1.14 (1.08,1.20)	1.04 (0.98,1.10)

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Supplementary table 5: How doctors ranked the importance of different actions that might be taken to improve the complaints process might be improved (note these data are not imputed).

	Not at all n (%)	A little n (%)	To some extent n (%)	Quite a lot n (%)	A great deal n (%)	missing n	total n
To allow the doctor to have more direct input into responses to patient complaints	245 (3.9%)	313 (5.0%)	2256 (35.8%)	1524 (24.2%)	1973 (31.3%)	3802	10113
To be given a clear written protocol for any process at the onset	217 (3.4%)	342 (5.4%)	1501 (23.8%)	1846 (29.3%)	2400 (38.1%)	3807	10113
To have strict adherence to a statutory timeframe for any complaint and investigation process	199 (3.2%)	402 (6.4%)	1599 (25.3%)	1732 (27.5%)	2379 (37.7%)	3803	10113
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	261 (4.2%)	440 (7.1%)	1816 (29.2%)	1972 (31.7%)	1733 (27.9%)	3891	10113
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	152 (2.4%)	202 (3.2%)	1202 (19.3%)	1981 (31.8%)	2690 (43.2%)	3886	10113
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	212 (3.4%)	434 (6.9%)	1296 (20.6%)	1528 (24.2%)	2837 (45.0%)	3806	10113
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	131 (2.1%)	260 (4.2%)	1315 (21.1%)	1855 (29.8%)	2668 (42.8%)	3884	10113
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	64 (1.0%)	138 (2.2%)	785 (12.4%)	1872 (29.7%)	3455 (54.7%)	3799	10113
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	59 (1.0%)	102 (2.2%)	757 (12.4%)	1770 (28.3%)	3559 (57.0%)	3866	10113
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	65 (1.0%)	107 (1.7%)	767 (12.3%)	1744 (28.0%)	3551 (57.0%)	3879	10113

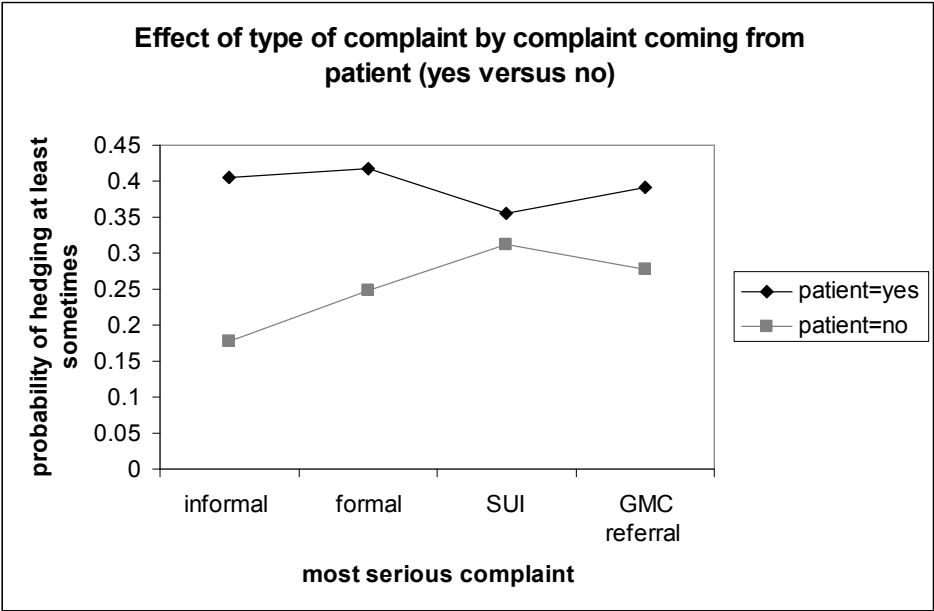
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The BMA and defence organisations should be more aggressive and less reactive to complaints in general	186 (3.0%)	447 (7.1%)	1601 (25.5%)	1465 (23.4%)	2575 (41.0%)	3839	10113
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Supplementary online material

Supplementary figure 1: Effect of type of complaint on hedging behavior by origin of complaint.



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The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom: a cross-sectional survey

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The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom: a cross-sectional survey

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Abstract

Objectives: the primary aim was to investigate the impact of complaints on doctors psychological welfare and health. The secondary aim was to assess whether doctors report that exposure to a complaints process is associated with defensive medical practice.

Design: cross-sectional anonymous survey study. Participants were stratified into recent/current, past, no complaints. Each group completed tailored versions of the survey.

Participants: 95,636 doctors were invited to participate. 10,930 (11.4%) responded. 7,926 (8.3%) completed the full survey and were included in the complete analysis.

Main outcome measures: anxiety and depression were assessed using the standardised Generalised Anxiety Disorder scale and Physical Health Questionnaire. Defensive practice was evaluated using a new measure. Single-item questions measured stress-related illnesses, complaints-related experience, attitudes towards complaints, and views on improving complaints processes.

Results: 16.9% of doctors with current/recent complaints reported moderate/severe depression (relative risk (RR) 1.77 (95% CI=1.48, 21.3) compared to doctors with no complaints (9.5%)). 15% reported moderate/severe anxiety (RR= 2.08 (95% CI=1.61, 2.68) compared to doctors with no complaints (7.3%)). Distress increased with complaint severity, with highest levels after General Medical Council (GMC) referral (26.3% depression, 22.3% anxiety). Doctors with current/recent complaints were 2.08 (95% CI=1.61, 2.68) times more likely to report thoughts of self-harm or suicidal ideation. Most doctors reported defensive practice: 82-89% hedging and 46-50% avoidance. 20% felt victimized after whistleblowing, 38% felt bullied. 27% spent over one month off work. Over 80% felt processes would improve with transparency, managerial competence, capacity to claim lost earnings and act against vexatious complainants.

Conclusions: doctors with recent/current complaints have significant risks of moderate/severe depression, anxiety, and suicidal ideation. Morbidity was greatest in cases involving the GMC. Most doctors reported practicing defensively including avoidance of procedures and high-risk patients. Many felt victimised as whistleblowers or reported bullying. Suggestions to improve complaints processes included transparency and managerial competence.

Strengths and limitations of this study

Strengths

- One of the largest reported on this subject with 10,930 respondents and 7,926 completing the survey
- Respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions.
- We have obtained quantitative data on mental wellbeing using validated questionnaires.

Limitations

- The main limitation of the study was the overall response rate of 11.4%. Accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. On the other hand doctors were being asked to comment on their regulators, and those most traumatised by the complaints process may have avoided engaging with the survey. Doctors who have been erased from the register or changed profession would not have been contacted.
- The cross-sectional design does not enable causation to be elucidated
- We collected responses from doctors who have not experienced a complaint but observed the impact on others. This means that the “no complaints” group may have more psychological morbidity than if doctors could be isolated from complaints processes completely. This may result in relative risks in the paper being underestimated.
- Some questions involved remembering past events and the possibility of recall bias must also be considered.
- There were missing responses for a number of questions. However this was dealt with using multiple imputation. However we are reassured that no major differences between the conclusions that would be drawn using complete cases compared to those where data was missing and imputed were found.

Introduction

In the United Kingdom (UK), the General Medical Council (GMC) acts as the regulator and sets standards that doctors are expected follow. It has the power to warn, suspend, restrict the practice of doctors or permanently remove them from the register. These powers are established under the Medical Act (1983).

It was recently disclosed that 96 doctors have died since 2004 while involved in GMC fitness to practice proceedings. In parallel to this, between 2011 and 2012 the number of doctors referred to the GMC increased by 18%¹. Although most doctors referred to the GMC have their case closed at triage or have no action taken², there can be harrowing consequences for some doctors who go through a GMC investigation³.

However the GMC represents only the tip of the iceberg of the complaints system. These include formal and informal hospital internal enquiries, serious untoward incident (SUI) investigations and disputes with managers and colleagues. Whilst there are some data relating to how doctors respond to GMC investigations, to our knowledge there are no studies addressing the issue of complaints procedures below this level in the UK. For many doctors, the prospect of facing a complaint or professional dispute causes them significant stress. This can manifest itself in how they perform in clinical practice and/or in their personal life, and may lead to both physical and psychological symptoms.

Clearly complaints and investigations when things go wrong are part of the checks and balances that should ensure appropriate oversight of a doctor's performance, the overall aim being to protect patients and maintain appropriate clinical standards. However the regulatory burden and stress associated with a complaints process may not lead to the outcomes that are desired.

In a previous study of surgeons surveyed in the United States (US), malpractice litigation was significantly associated with burnout, depression and suicidal ideation⁴. There are also data to suggest that medical errors are associated with depression and loss of empathy in the physician responsible⁵. None of these outcomes are likely to improve patient care. A further study has shown suicidal ideation in over 6% of US surgeons, over twice the background rate in the population. In this study, burnout, depression, and involvement in a recent medical error were strongly and

IMPACT study

independently associated with suicidal ideation after controlling for other personal and professional characteristics. Most surgeons in this study were reluctant to seek professional help due to concerns that there may be an impact on their career⁶.

In a study published in the BMJ, Jain and Ogden described the impact of patient complaints on general practitioners in the United Kingdom and reported an association with anger, depression and suicide⁷. It is important to note they also described clinicians involved in complaints practicing medicine more defensively. Such practice may be broadly categorized into “hedging” and “avoidance”. Hedging is when doctors are overcautious leading for example to over-prescribing, referring too many patients, or over investigation. Avoidance includes not taking on complicated patients, and avoiding certain procedures or more difficult cases.

The primary aim of this study was to investigate the psychological welfare of doctors who have observed or experienced both past and/or current complaints. The secondary aim of the study was to assess whether being involved in or witnessing a complaints process leads to doctors reporting that they practice medicine defensively.

IMPACT study

Methods

Design

The study used a cross-sectional survey design where participants were streamed into three groups: current/recent complaint (on-going or resolved within the last 6 months), past complaint (resolved more than 6 months ago), and no complaints. Each group completed a slightly different version of the questionnaire. Participants in the current complaints and no complaints group were asked about their current mood and health whereas the past complaints group were also asked to respond about their mood and health at the time of the complaint.

Ethical approval was obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Participants

The British Medical Association (BMA) is an apolitical professional association and independent trade union that represents doctors and medical students in the UK, membership is voluntary. Members of the BMA in November 2012 who had pre-consented to being contacted for research purposes were invited to participate (n=95,636). They were emailed a link to an online encrypted questionnaire using Survey Monkey® and an information sheet describing the study. Participants were guaranteed that their responses were anonymous and untraceable. The survey remained open for two weeks and three reminders were sent out about the study during this time. A total of 10,930 (11.4%) participants responded to the survey. Of these, 696 (6.4%) were excluded as they only completed the demographics section, and 121 (1.1%) participants were excluded because a technical error meant that they were given the wrong sections to complete. A further 2187 (20.0%) participants completed the demographics section and indicated whether they had had a complaint and they were partially included in the analysis (sample 1). A total of 7926 (72.5%) participants completed the survey (sample 2). Of these, 1380 omitted some sections of

the survey but were included in the full analysis. Demographic information in relation to both samples is shown in table 1.

In order to check that our sample was representative, we compared our study population with the total BMA membership database (see table 1). This showed that our sample was broadly representative in terms of gender (46.3% females in the BMA membership database compared to 47.5% females in both sample 1 and 2) and place of qualification (80.1% qualified in the United Kingdom in the BMA population compared to 80.7% in sample 1 and 81.2% in sample 2). Our study population consisted of more doctors in the 35-59 age range (49.8% in the BMA population compared to 74.8% in sample 1 and 73.4% in sample 2), ethnic minorities were under-represented (32.4% in the BMA population compared to 22.4% in sample 1 and 21.8% in sample 2), and consultants and GPs were over-represented (27.2% were consultants and 26% were GPs in the BMA population compared to 37.1% and 38.4% in sample 1 and 36.5% and 37.8% in sample 2) whilst junior doctors and retired doctors were underrepresented (26.4% were juniors and 8.6% were retired in the BMA population compared to 15.7% and 0.7% in sample 1 and 16.5% and 0.7% in sample 2).

Measures

A pilot of the questionnaire trialed on 20 medical doctors of varying grades and specialties and their feedback was incorporated in the questionnaire design (see details below). In total, 108 questions were asked to the no complaints group and 179 questions were asked to both the complaints groups. Based on filling in trial questionnaires, we estimate the time required to complete the questionnaire was approximately 30 minutes. The questionnaire is included as supplementary online information (supplementary file 1) or can be reviewed by using the following link: <https://www.surveymonkey.com/s/P55KH5P>

Having completed 13 items obtaining demographic information (including age, specialty, gender, marital status, ethnicity, place of training, marital status, and details about their employment), participants were separated into three streams based on

IMPACT study

whether they had i) a current/recent complaint (within the past 6 months), ii) past complaint, or iii) no current or past complaints.

The different types of complaint or investigation that were considered in the study are outlined below:

Informal: an informal complaint usually involves a patient speaking directly to the people involved in their care in order to resolve their concerns. It can be escalated to a formal complaint if not resolved locally.

Formal: this is a written complaint usually to the chief executive or an employing organization that triggers an investigation and often requires a written response within a set time period and may lead to disciplinary action or referral to the GMC.

Serious Untoward Incident (SUI): the definition of an SUI is wide ranging and includes an unexpected death, poor clinical outcome, a hazard to public health, a trend leading to reduced standards of care, damage to reputation or confidence in a service or adverse media coverage or public concern about an organization. The aim is to prevent recurrence of the adverse event, but may lead to disciplinary action for individuals or referral to the GMC.

General Medical Council: a complaint can be made about a doctor for issues ranging from personal behavior outside work to clinical concerns about their practice. The GMC review cases and have the power to suspend doctors from practice during an investigation. This may lead to a warning or referral to a tribunal that has the power to restrict a doctor's practice, impose working under supervision, suspension from the medical register or remove a doctor from the register permanently. The GMC may also issue warnings and undertakings to doctors to change aspects of their behavior or practice.

All participants completed the following sections (although some individual items varied in the different streams):

Experience of complaint: Participants in both complaints groups were asked 75 questions about their complaint(s) generated from Bark and colleagues⁸ and the pilot study. This included their total number of complaints, the most significant complaint and followed by a series of questions about the most serious complaint if they had had

more than one, including the reason for the complaint, the origin, the duration, the outcome, the cost (i.e. any leave taken, the estimated financial cost), and the level of support sought and obtained during the complaint. Participants who had been referred to the GMC were also asked to rate how stressful they found each aspect of the procedure. Whilst the majority of the questions used a 5-point scale, some questions were qualitative and a few were yes/no.

Attitudes towards complaints: All groups were asked ten questions using a 5-point scale generated from the pilot study about their attitudes toward complaints, the causes of complaints, and their perceived threat of future complaints. The no complaints group was asked 11 additional questions about their attitudes towards the complaints process (e.g., “I believe that complaints are reasonably dealt with”) and how well they perceive that they would be supported in the event of a complaint made against them (e.g., “If I had a complaint made against me, I am confident that my management would support me”).

Suggestions to improve the complaints process. All groups were asked to rate different suggestions on how to improve the complaints process on 11 5-point items. These proposals were generated from the pilot study.

Medical history: The presence of common stress-related illnesses at the time of the complaint or currently were measured using 12 items, including recurring infections, gastro-intestinal, sleep, cardio-vascular and mood problems^{9, 10}. In addition, questions were asked about self-reported drug and alcohol use, as well as life stressors at the time of both current and past complaints.

Defensive medical practice: Twenty items measuring current defensive medical practice were generated from a literature review^{10,11,12}. 12 items additional items were generated from the pilot study (5 for the no complaints group). Items were either rated on a 5-point scale or a yes/no response.

Depression: The *Physical Health Questionnaire (PHQ-9)*¹³ is a well-known standardised screening measure assessing the presence and severity of depression. It has been used across a wide range of populations and demonstrated good

psychometric properties. Respondents were considered depressed if they scored 10 or more on the PHQ-9¹⁴.

Anxiety: The *Generalised Anxiety Disorder* scale (GAD-7)¹⁵ is a standardised screening measure assessing the presence and severity of generalized anxiety disorder. The GAD-7 is also moderately good at identifying panic disorder, social anxiety disorder, and post-traumatic stress disorder. It has been used across a wide range of populations and demonstrated good psychometric properties. Respondents were considered anxious if they scored 10 or more on the GAD-7¹⁵.

Life Satisfaction. Life satisfaction was assessed with 10 items using a 6-point scale asking about satisfaction-dissatisfaction with marriage, career, recreation/leisure, self/family, and life satisfaction/optimism.

Statistical analysis

For the purpose of this paper, we have limited ourselves to analysis of psychological welfare and health (i.e. anxiety, depression, stress-related illness), defensive practice, culture, time off work and suggestions for improving the complaints process. To summarise the fifteen items measuring defensive practice, an exploratory factor analysis was conducted which identified two underlying factors. The first involves over-investigation and overly cautious management, which we have termed “hedging” (9 items, including for example “carried out more tests than necessary”, “referred patient for second opinion more than necessary” and “admitted patients to the hospital when the patient could have been discharged home safely or managed as an outpatient”, Cronbach’s $\alpha=0.92$). The second involves avoiding difficult aspects of patient treatment, which we termed “avoidance” (3 items, “stopped doing aspects of my job”, “not accepting high risk patients in order to avoid possible complications”, and “avoiding a particular type of invasive procedure”, Cronbach’s $\alpha=0.77$). Due to strongly skewed distributions, the sumscores hedging and avoidance were analysed both as dichotomous (any hedging (>0)/avoidance (>0) versus no hedging (0)/avoidance (0)) and ordinal variables (never (0), rarely (hedging 1-12, avoidance 1-4), sometimes (hedging 13-24, avoidance 5-8) or often (hedging 25-36, avoidance 9-12) displaying hedging or avoidance behavior.)

The statistical analysis mainly consisted of descriptive analyses. Cross-tabulations of psychological welfare and defensive practice indicators have been made and relative risks were computed to investigate the relationship between complaint group and psychological welfare or defensive practice indicators. Additionally, means within the complaint groups and mean differences have been computed for continuous variables such as depression and anxiety. Asymptotic 95% confidence intervals were computed for relative risks and mean differences. Unpooled standard errors of the mean difference were used when necessary. Proportions and their 95% confidence intervals were also computed for feeling bullied during the investigation, feeling victimized because of whistle blowing and the amount of time spent off work. Proportions were computed to investigate the amount of support of respondents to various proposed actions to improve the complaints process.

As the primary aim of this study was to investigate the impact of complaints on the psychological welfare and health of doctors, a logistic regression analysis was performed to assess the relationship between moderate to severe depression and receiving a complaint, while controlling for predefined confounders (age, gender, being in a relationship, being White British, and medical specialty). Interactions of complaint with the confounders were included if necessary ($\alpha=0.001$). Proportional odds logistic models were constructed to investigate whether hedging or avoidance are associated with characteristics of the complaint process (length of investigation, timing of complaint, outcome of investigation, origin of the complaint, type of the complaint). For hedging and avoidance, all two-way interactions were of interest and were included if necessary ($\alpha=0.001$). We checked linearity assumptions, the presence of multi-collinearity, the presence of outliers, and the proportional odds assumption when necessary.

There was substantial item non-response. For key variables such as depression, anxiety, hedging and avoidance, non-response was approximately 20%. Missing data was addressed by performing multiple imputation¹⁶. Missing responses were replaced by 100 plausible values based on available responses to other questions, leading to 100 completed datasets that represent the uncertainty about the right value to impute. For composite scales (depression, anxiety and hedging), a two-step approach to

imputation was used to decrease the computational burden and make appropriate use of the available answers to separate items, first imputing the respondent's mean of non-missing items if at least 80% of the items of the composite scale were non-missing, followed by multiple imputation (MI) at the scale level for the remaining individuals. For avoidance, the three items were individually imputed. Multiple imputation was performed using chained equations (MICE)¹⁶ with 10 iterations. After MI, each completed dataset was analysed separately and results combined using standard Rubin's rules (Rubin, 1987). To assess the impact of item non-response, we performed a sensitivity analysis comparing the results of the complete case analysis to the results after MI, which assumes missingness at random. Additionally, MI assuming missingness not at random (informative missings) was considered for key variables depression, anxiety, hedging and avoidance¹⁷. Since these variables are based on responses to sensitive questions, informative missingness is plausible. As a missingness mechanism we assumed that those respondents with missingness might have been more anxious or depressed, or more likely to display hedging behavior or avoidance. More details on the MNAR analysis can be found in the supplementary file.

The data was analysed using SAS (version 9.3, SAS Institute, Cary, NC, USA). Multiple imputations were performed using IVEware (<http://www.isr.umich.edu/src/smp/ive/>)¹⁸.

Results

Psychological welfare and health

Overall, 16.9% of doctors with recent or ongoing complaints reported clinically significant symptoms of moderate to severe depression (table 2). Doctors in this group were at increased risk of depression compared to those with a past complaint (7.8%) or no personal experience of a complaint (9.5%. RR=1.77, 95% CI=1.48, 2.13). This was the case even when controlling for the effects of gender, age (cubic effect), being in a relationship (yes/no), being White British (yes/no), and medical specialty. The effect of having a recent or current complaint depends on gender. When there has been no complaint, men tend to be less likely to be depressed than women (OR=0.76,

95% CI=0.54, 1.09), but a recent or current complaint has a higher impact on men than on women (OR women=1.72, 95% CI=1.28, 2.30; OR men=2.86, 95% CI 2.04, 4.01]. Within the PHQ-9, doctors with an ongoing or recent complaint (9.7%) were twice as likely as doctors with no complaints (4.7%) to report having thoughts of self-harm or suicidal ideation (RR=2.08, 95% CI=1.61, 2.68; see table 2). The sensitivity analysis shows that this conclusion holds under various assumed missingness mechanisms (see supplementary figure 1, supplementary table 1).

Moreover, 15% of doctors in the recent complaints group reported clinically significant levels of anxiety on the GAD-7, which is twice as likely as doctors who have no complaints (see Table 2, 7.3%, RR= 2.08, 95% CI=1.61, 2.68). Also this conclusion holds under various assumed missingness mechanisms (see supplementary file 1, supplementary table 2).

The level of psychological distress was related to the type of complaints procedure. Doctors going through a GMC referral reported the highest levels of depression (26.3%), anxiety (22.3%) and thoughts of self-harm (15.3%) compared to SUIs (16.1%, 15.3% and 9.3% respectively), formal complaints (15.6%, 13.5% and 9.0%), and informal complaints (12%, 12% and 6.4%) (table 3).

When asked directly using a single item scale, doctors were 3.78 (95% CI=2.68, 5.32) times more likely to report the presence of suicidal thoughts whilst going through a current or recent complaint compared to doctors who had no complaints (table 4).

Doctors who have experienced either a recent or past complaint reported higher levels of health problems at the time of the complaint compared to the no complaint group. These included gastro-intestinal problems, subjective anxiety and depression, anger, other mental health problems, insomnia, relationship problems, and frequent headaches. Doctors in the current complaints group also reported higher levels of cardio-vascular problems (table 4).

Defensive practice

Overall, 84.7% of doctors with a recent and 79.9% with a past complaint reported changing the way they practiced medicine as a result of the complaint. 72.7% of doctors with no previous complaint reported changing their practice having observed a colleague's experience of a complaint (table 5).

88.6% of doctors with a recent or current complaint and 82.6% of those with a past complaint displayed hedging behaviour. 81.7% of doctors with no previous complaints reported hedging. The sensitivity analysis revealed that under the MNAR assumption, the conclusion still holds that people in the recent or current complaint group display more hedging behavior than people in the no complaints group, but also people with a past complaint display considerably more hedging behavior (supplementary figure 1, supplementary table3).

49.8% of doctors with a recent or current complaint, 42.9% of doctors with a past complaint, and 46.1% of doctors with no personal experience of a complaint reported avoidance behaviour having observed a colleague's experience of a complaint. Although the results from the complete case analysis support the conclusion that mostly people in the recent and current complaint group display avoidance behaviour, the results from the analysis under the MNAR assumption suggest that it is people with a past complaint who display most avoidance behaviour (supplementary figure 1, supplementary table 4).

The multivariable proportional odds analysis indicated that the odds of more severe hedging are higher for people with a recent or ongoing complaint than for people with a past complaint (OR 1.33 95% CI=1.19, 1.49) (table 6). The odds of hedging slightly increased with the length of time of the investigation (OR 1.01 per month, 95% CI=1.00, 1.01). Hedging was increased when retraining was imposed (OR 1.62, 95% CI=0.84, 3.13) and decreased when the doctor was suspended from practice (OR 0.56, 95% CI=0.26, 1.18). The odds of hedging also decreased when the complaint came from medical colleagues (OR 0.67, 95% CI=0.53, 0.86). There was evidence of an interaction between the type of the most serious complaint one has experienced and whether or not the complaint came from a patient (supplementary figure 1). Hedging was higher when the complaint came from a patient, this was most clear for informal

(OR=3.16, 95% CI=2.17, 4.58) and formal complaints (OR=2.18, 95% CI=1.67, 2.85). When the complaint did not come from a patient, hedging was higher for formal complaints, SUI's and GMC referrals compared to informal complaints (OR=1.52, 95% CI=1.03, 2.24, OR=2.10, 95% CI=1.31, 3.35 and OR=1.78, 95% CI=1.15, 2.71, respectively).

As with hedging, the multivariable analysis indicated that the odds of more severe avoidance increased with the length of time the investigation (OR 1.01 per month, 95% CI=1.01, 1.02), and was higher for people with a recent or current complaint than for people with a past complaint (OR 1.20, 95% CI=1.07, 1.35) (table 7). Avoidance was also increased when the investigation resulted in imposed retraining (OR 1.79, 95% CI=1.0, 3.09). Avoidance behaviour most severely increased when the complaint came from a patient group (OR 1.71, 95% CI=1.02, 2.87) or management (OR 1.59, 95% CI=1.16, 2.16), or when the complaint was anonymous (OR 1.58, 95% CI=1.06, 2.36). The type of complaint did not meaningfully influence the odds of more severe avoidance.

Overall, as a result of their experience of the complaints process, 23% of doctors reported suggesting invasive procedures against their professional judgement, and 14% reported becoming more likely to abandon a procedure at an early stage.

Culture and time off work

20% (95% C.I. 19% to 22%) reported that they felt victimized because they had been a whistleblower for clinical or managerial dysfunction. 38% (95% C.I. 37% to 40%) of people who have had a complaint, recently or in the past, reported feeling bullied during the investigation.

60% (95% C.I. 57% to 64%) spent less than a week off work. However, 27% (95% C.I. 24% to 30%) of people with complaints spent more than a month off work.

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Opinions on changes to improve the system

Of those doctors that gave a response, 85% felt that for managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them mattered quite a lot or a great deal in terms of improving the process. An equal number (85%) felt that if a doctor is exonerated but has suffered financial loss during the process, then they should have the option to make a claim for recovery of lost earnings or costs and in addition that there should be complete transparency of any management communication about the subject of a complaint and that access to such communications should be given to a doctor's representatives. Seventy-four percent of respondents felt that it mattered quite a lot or a great deal that if a complaint from a clinical or managerial colleague was found to be vexatious then this could be investigated and possible disciplinary measures taken. The full details of responses in relation to actions that could be taken to reduce the psychological impact of complaints processes are shown in supplementary table 5.

Discussion

We have shown that doctors who responded to our questionnaire who have recently received a complaint of any kind are 77% more likely to suffer from moderate to severe depression than people who have never had a complaint. They also have double the risk of having thoughts of self-harm, and double the risk of anxiety. Welfare is lowest when the complaint involves referral to the GMC. Doctors with a recent or current complaint also reported that they suffered from an increased likelihood of cardiovascular and gastro-intestinal disorders, depression, anxiety, anger and irritability, suicidal thoughts, sleep difficulty, relationship problems, and frequent headaches than people who had not been through a complaints process. In many cases these problems persisted. We have also shown that 80% of doctors answering the survey reported changing the way they practiced as a result of either complaints against themselves, or after observing a colleague go through a complaints process. The majority (84%) of doctors reported hedging behaviour in response to a complaint (i.e. increased defensive practice) whilst many (46%) admitted avoidance. A further important finding was that many doctors who had a complaint (20%) felt they were victimised after whistle blowing, thirty-nine percent reported that they felt bullied when they were going through the process, and 27% had more than a month off work.

A strength of the study is that to our knowledge it is one of the largest reported on the subject involving 10,930 respondents with 7,926 completing the survey. It is certainly the largest relating to doctors in the UK. We think it is critical that respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions. Furthermore we have obtained quantitative data on the mental wellbeing of doctors using validated questionnaires. It is also important to note that we have collected responses from doctors who have not experienced a complaint but observed the impact on others. On the one hand this gives insight into the impact of observing a colleague going through a complaints process, however it also means that the “no complaints” group may have a higher overall level of psychological morbidity than if doctors could be isolated from complaints processes completely. Hence the relative risks in the paper may be underestimated. A significant limitation of the study is that the response rate was 11.4%, accordingly the findings must be interpreted with

caution due to the possibility of ascertainment bias. What constitutes an acceptable response rate is a subject of debate, however our response rate is clearly low¹⁹. We believe this is inevitable when asking doctors to comment on disciplinary processes and in particular on their regulator. Even if we take the view that the respondents are a selected group, they still demonstrate that a very considerable number of doctors are significantly impacted by complaints processes and practice defensively. It must also be remembered that doctors that have been most traumatised by the complaints process may have felt unable to take part in the survey and a small number are known to have committed suicide. Furthermore those no longer on the register (for example if they have changed profession or erased from the register) are unlikely to be members of the BMA and so would not have been contacted. As some questions involved remembering past events the possibility of recall bias for some answers must also be considered. For a number of questions there were missing responses. However we have considered this issue by using multiple imputation and were reassured that we found no essential differences between the conclusions that would be drawn using complete cases compared to those where missing data have been imputed.

As with any cross-sectional survey we must be careful when considering the findings, as we cannot show causation. It is possible that doctors with depression, anxiety and suicidal ideation are more likely to have complaints made against them, similarly being complained against may be the causative factor rather than the processes themselves. However this still means the information presented is important as if we take the former view, it means those going through complaints processes are a vulnerable group that need support. This was illustrated in a recent study that reported that sick doctors under investigation stated that the processes and communication style employed by the GMC were often distressing, confusing, and perceived to have impacted negatively on their mental health and ability to return to work²⁰.

It is interesting that our findings are similar to a questionnaire-based study of surgeons in the United States examining the emotional toll of malpractice lawsuits. This study found significantly more depression and burnout in surgeons who had recently been exposed to a lawsuit and highlighted the association between burnout and the likelihood of making a medical error⁴.

We found that 10% of doctors responding to the survey who have had a recent complaint have had thoughts of self-harm and are over twice as likely to have had such thoughts compared to doctors who had not personally experienced a complaint. When referral to the GMC is looked at in isolation the number of doctors who reported suicidal ideation reached 15.3%, whilst 26.3% had moderate to severe depression and 22.3% had moderate to severe anxiety on the basis of two validated instruments. Even set against the limitations of the study we have highlighted above, these findings are concerning. In a recent feature article in the BMJ, Dyer reported on the high number of suicides associated with GMC proceedings³. Our results support the view that these proceedings have a disproportionate impact on doctors, especially as the vast majority of doctors who are referred to the GMC are found to have no significant case to answer². However the GMC is at the apex of what amounts to a “complaints pyramid” and our data show similar significant psychological morbidity for doctors across the entire spectrum of complaints procedures.

The incidence of feeling victimized following whistleblowing (20%) and bullying (38%) will be a concern to those trying to build a culture in the UK National Health Service (NHS) where it is safe to speak out about clinical and managerial concerns. The Francis report highlighted the dysfunctional culture that is prevalent in many NHS organisations²¹. Other reports have also highlighted serious concerns about the pressures that may be placed on hospital staff²². Given the large numbers involved, our study supports the view that whistleblowing in the NHS is often not a safe action, that bullying is not uncommon, and that these problems are not isolated events.

The GMC exists to protect patients and the public. This is also the aim of other types of complaints processes with the overall purpose being to learn from mistakes and improve the performance of everyone taking part in patient care. However as with all interventions there may be unforeseen consequences. Previously Jain et al in a qualitative study reported that many general practitioners practice defensively following a complaint⁷. Our data also show the vast majority of doctors who took part in the study reported engaging in defensive practice. This included carrying out more tests than necessary, over-referral, over-prescribing, avoiding procedures, not accepting high-risk patients and abandoning procedures early. Nash and colleagues have also reported high levels of defensive practice²³. In their study which had a

higher response rate of 36%, 43% of doctors reported that they referred more patients, 55% ordered more tests and 11% stated they prescribed more medications than usual in response to medico-legal concerns. In a further report the same authors showed that doctors working in high- intervention areas of medicine are more likely to be the subject of medico-legal complaints²⁴. Defensive practice in such specialties may be particularly concerning.

These behaviors are not in the interest of patients and may cause harm, whilst they may also potentially increase the cost of health care provision. By far the majority of doctors who are reported to the GMC are not found to have a significant case to answer², as is probably the case with other lower level complaint investigations. It therefore does not seem unreasonable to argue that as they currently function, GMC enquiries may do more overall harm than good in terms of patient care. As the “complaints pyramid” is descended it is possible this balance may improve, although we found defensive practice across the entire spectrum of complaints processes.

Whilst we fully acknowledge the limitations associated with any study of this type, we believe our findings have implications for policy makers. Procedures must exist to enable patients to make a complaint about their care, for professionals to raise concerns about standards of practice and for serious untoward events to be investigated. However a system that is associated with high levels of psychological morbidity amongst those going through it is not appropriate as either the subjects of such procedures are vulnerable at the outset or are suffering such morbidity as a direct result of the investigations themselves. Most importantly, a system that leads to so many doctors practicing defensive medicine is not good for patients. A further concern for patient care is the association between doctor’s distress, burnout and decreased empathy with perceived medical errors²⁵.

When asked how the complaints process could be improved doctors indicated that what mattered to them was that the process should be transparent and that staff responsible for investigating complaints should be up to date and competent. There was also a clear feeling that in the event of a complaint being shown to be vexatious then there should be disciplinary consequences if this related to colleagues, or the option for financial redress in the event it related to patients. Concerns about the lack of redress associated with vexatious complaints have been raised in the BMJ before²⁶.

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This highlights the inherent tension in the system whereby an apparent “whistleblower” may be perceived as a vexatious complainant by a colleague.

We have shown that doctors who responded to our questionnaire and experience or observe complaints processes exhibit high levels of psychological morbidity including severe depression and suicidal ideation. These effects are greatest when the process involves the General Medical Council. In addition the majority of these doctors exhibit hedging and avoidance, both these behaviours may be damaging to patient care and be contrary to the professed aims of these processes.

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Contributors

TB conceived of the original idea for the study, interpreted results, drafted the paper and is overall guarantor. MJ designed the questionnaire, obtained ethical approval, contributed to the preparation of the data set, interpreted results and contributed to drafts of the paper. LW and BVC carried out the statistical analysis and contributed to drafts of the papers. MP contributed to the study design, interpretation of results and commented on drafts of the paper. DT and CVA contributed to interpretation of results and commented on drafts of the paper. All authors approved the final version of the manuscript.

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Competing interests

All authors have completed the Unified Competing Interest form and declare: Michael Peters is head of the BMA doctors for doctors unit and so receives payment from the BMA. The BMA had no role in data collection, design of the study, data analysis, interpretation of data, or writing the report and had no influence over whether to submit the manuscript. All other authors stated that they had no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other

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relationships or activities that that could appear to have influenced the submitted work

Ethical approval

Ethical approval was sought and obtained from King’s College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Transparency declaration

The lead author (T Bourne) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no aspects of the study have been omitted in relation to the specific aspects of the study reported in this paper; and that any discrepancies from the study as planned (and, if relevant registered) have been explained.

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Tables and Figures

Table 1: Demographic information relating to both sample 1 and 2 in the study

Age	Total BMA membership consented for research	Sample 1 (n=10113)	Sample 2 (n=7926)
Up to 25	17.8%	1.4%	1.4%
26-29	9.0%	5.1%	5.5%
30-34	9.6%	8.6%	8.8%
35-39	10.3%	11.0%	11.0%
40-44	10.3%	13.5%	13.1%
45-49	10.8%	16.9%	16.8%
50-54	10.3%	18.8%	18.8%
55-59	8.1%	14.6%	14.7%
60-64	5.0%	6.6%	6.4%
65-69	3.0%	2.5%	2.6%
Over 69	5.9%	1.1%	1.0%
Gender	46.3% Female	47.5% Female	47.5% Female
Place of qualification			
United Kingdom	80.1%	80.7%	81.2%
India	8.2%	6.6%	6.2%
Pakistan	2.2%	1.2%	1.2%
Ireland	0.9%	1.4%	1.4%
Nigeria	1.1%	1.2%	1.2%
Germany	0.7%	1.1%	1.2%
South Africa	0.7%	0.8%	0.8%
Other	6.2%	6.9%	6.9%
Ethnicity			
White British	67.6%	77.6%	78.2%
Asian or Asian British	23.3%	16.6%	15.8%
Black or Black British	3.5%	2.3%	2.3%
Chinese or Chinese British	2.9%	1.3%	1.3%
Mixed	2.7%	2.3%	2.3%
Grade:			

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Academics	2.1%	1.2%	1.3%
Consultants	27.2%	37.1%	36.5%
General Practice	26.0%	38.4%	37.8%
Junior Doctors	26.4%	15.7%	16.5%
SASC	5.3%	5.8%	6.11%
Retired	8.6%	0.7%	0.7%
Other or no answer	4.4%	1.0%	1.1%

Table 2. Symptoms severity and relative risk of psychological distress for each complaints group.

	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Depression (PHQ-9)						
Mean (SD) ^a	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
Thoughts of ‘self-harm’ n (%)	83 (4.7%)	221 (5.7%)	218 (9.7%)	522 (6.6%)	1.22 (0.93, 1.61)	2.08 (1.61, 2.68)
Anxiety (GAD-7)						
Mean (SD) ^b	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe anxiety n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 3. Psychological distress within the recent / on-going complaints group by complaint that had the most impact.

	Informal complaint n=362 (16.0%)	Formal Complaint n=1196 (53.0%)	SUI n=280 (12.4%)	GMC referral n=374 (16.6%)	No complaint n=1780 (22.5%)
Depression (PHQ-9)					
Mean (SD) ^a	4.2 (5.0)	4.8 (5.4)	5.1 (5.6)	6.6 (6.7)	3.7 (4.3)
Moderate to severe depression n (%)	45 (12.0%)	190 (15.6%)	46 (16.1%)	100 (26.3%)	169 (9.5%)
Thoughts of 'self-harm' n (%)	24 (6.4%)	110 (9.0%)	27 (9.3%)	58 (15.3%)	83 (4.7%)
Anxiety (GAD-7)					
Mean (SD) ^b	3.8 (4.3)	4.4 (4.7)	4.7 (5.1)	5.7 (5.7)	3.1 (3.8)
Moderate to severe anxiety n (%)	44 (12.0%)	165 (13.5%)	44 (15.3%)	85 (22.3%)	131 (7.3%)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 4. Psychosomatic health for each of the complaints group. Please note that the past complaints group used retrospective information asking about worsening or onset of symptoms at the time of the complaint, whereas the no and recent complaint groups were asked about the presence of symptoms in the last twelve months.

	No complaint n=1780 (22.5%)	Recent or current complaint n=2257 (28.5%)	Past complaint n=3889 (49.1%)	RR recent or current versus no complaint.
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	124 (7.0%)	280 (12.4%)	405 (10.4%)	1.78 (1.44-2.20)
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	217 (12.2%)	426 (18.9%)	934 (24.0%)	1.55 (1.32-1.82)
Depression	187 (10.5%)	490 (21.7%)	1148 (29.5%)	2.07 (1.74-2.45)
Anxiety	476 (26.7%)	1108 (49.1%)	3045 (78.3%)	1.84 (1.65-2.04)
Anger and irritability	358 (20.1%)	928 (41.1%)	2406 (61.9%)	2.04 (1.77-2.35)
Other mental health problems	12 (0.7%)	54 (2.4%)	256 (6.6%)	3.45 (1.80-6.60)
Suicidal thoughts	44 (2.5%)	211 (9.3%)	519 (13.4%)	3.78 (2.68-5.32)
Sleep problems / insomnia	479 (26.9%)	1137 (50.4%)	288 (74.1%)	1.87 (1.67-2.10)
Relationship problems	187 (10.5%)	458 (20.3%)	911 (23.4%)	1.94 (1.63-2.30)
Frequent headaches	242 (13.6%)	432 (19.2%)	1027 (26.4%)	1.41 (1.19-1.65)
Minor colds	492 (27.6%)	509 (22.5%)	5447 (14.0%)	0.82 (0.73-0.92)
Recurring respiratory infections	77 (4.3%)	143 (6.3%)	306 (7.9%)	1.47 (1.11-1.95)

Table 5 Defensive practice according to complaint group

Because of your/other's experiences with complaints, have you....	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Changed the way of practicing medicine n (%)	1294 (72.7%)	3106 (79.9%)	1912 (84.7%)	6312 (79.6%)	1.10 (1.06,1.14)	1.17 (1.13,1.21)
Displayed hedging behaviour n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
Displayed avoiding behaviour n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
Suggested invasive procedures against professional judgement n (%)	359 (20.2%)	902 (23.2%)	585 (25.9%)	1846 (23.3%)	1.15 (1.02,1.29)	1.29 (1.13,1.46)
Become more likely to abandon a procedure at an early stage n (%)	248 (14.0%)	515 (13.3%)	372 (16.5%)	1136 (14.3%)	0.95 (0.80,1.13)	1.18 (1.00,1.39)
Become less committed and worked strictly to job description n (%)	-	795 (20.5%)	613 (27.2%)		-	-

Table 6. Factors influencing hedging behaviour.

Odds Ratio Estimates for hedging			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.006	1.002	1.011
Recent or current complaint (versus past complaint)	1.331	1.193	1.485
Outcome of investigation			
No fault/ exonerated (yes versus no)	1.051	0.676	1.633
Retraining imposed (yes versus no)	1.622	0.913	2.885
Disciplinary action (yes versus no)	0.815	0.433	1.532
Suspended from practice (yes versus no)	0.557	0.289	1.075
Struck off from the register (yes versus no)	0.583	0.754	1.761
The process was not clearly concluded (yes versus no)	1.152	0.900	1.960
Where did the complaint come from			
Trust (yes versus no)	1.328	0.900	1.960
Medical colleagues (yes versus no)	0.672	0.526	0.860
Management (yes versus no)	0.797	0.581	1.094
Media (yes versus no)	1.084	0.467	2.515
Patient group (yes versus no)	1.495	0.906	2.464
Other health care professional (yes versus no)	1.047	0.798	1.375
Patient (yes versus no)			
For informal complaint	3.155	2.172	4.584
For formal complaint	2.180	1.670	2.846
For SUI	1.212	0.826	1.778
For GMC referral	1.670	1.207	2.311
Anonymous (yes versus no)	1.362	0.922	2.012
Type of complaint			
Formal complaint versus informal complaint			
Complaint did not come from a patient	1.521	1.034	2.239
Complaint came from a patient	1.051	0.903	1.223
SUI versus informal complaint			
Complaint did not come from a patient	2.097	1.311	3.352
Complaint came from a patient	0.805	0.648	1.002
GMC referral versus informal complaint			
Complaint did not come from a patient	1.776	1.164	2.709
Complaint came from a patient	0.940	0.757	1.168

Table 7. Factors influencing avoidance behaviour

Odds Ratio Estimates for avoiding			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.011	1.006	1.016
Recent or current complaint (versus past complaint)	1.201	1.069	1.350
Outcome of investigation			
No fault/ exonerated (yes versus no)	0.893	0.594	1.340
Retraining imposed (yes versus no)	1.787	1.033	3.092
Disciplinary action (yes versus no)	1.211	0.682	2.152
Suspended from practice (yes versus no)	1.066	0.566	2.008
Struck off from the register (yes versus no)	0.626	0.119	3.305
The process was not clearly concluded (yes versus no)	1.202	0.805	1.796
Where did the complaint come from			
Trust (yes versus no)	1.338	0.910	1.968
Medical colleagues (yes versus no)	1.439	1.134	1.826
Patient (yes versus no)	1.364	1.114	1.670
Management (yes versus no)	1.585	1.163	2.161
Media (yes versus no)	0.866	0.380	1.972
Patient group (yes versus no)	1.708	1.019	2.866
Other health care professional (yes versus no)	1.326	1.015	1.731
Anonymous (yes versus no)	1.580	1.057	2.360
Type of complaint			
GMC referral (versus informal complaint)	1.082	0.885	1.323
SUI (versus informal complaint)	1.112	0.904	1.368
Formal complaint (versus informal complaint)	1.036	0.893	1.203

IMPACT study

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The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom: a cross-sectional survey

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Abstract

Objectives: the primary aim was to investigate the impact of complaints on doctors ~~the~~ psychological welfare and health ~~of doctors~~. The secondary aim was to assess whether doctors report that exposure to a complaints process is associated with defensive medical practice.

Design: cross-sectional anonymous survey study. Participants were stratified into recent/current, past, ~~or~~ no complaints. Each group completed tailored versions of the survey.

Participants: 95,636 doctors were invited to participate. 10,930 (11.4%) responded. 7,926 (8.3%) completed the full survey and were included in the complete analysis.

Main outcome measures: anxiety and depression were assessed using the standardised Generalised Anxiety Disorder scale and Physical Health Questionnaire. Defensive ~~medical~~ practice was ~~evaluated~~ measured using a new measure. Single-item questions measured stress-related illnesses, complaints-related experience, attitudes towards complaints, and views on improving complaints processes.

Results: 16.9% of doctors with current/recent complaints reported moderate/severe depression (relative risk (RR) 1.77 (95% CI=1.48, 21.3) compared to doctors with no complaints (9.5%)). 15% reported moderate/severe anxiety (RR= 2.08; (95% CI=1.61, 2.68) compared to doctors with no complaints (7.3%)). Distress increased with complaint severity, with highest levels after General Medical Council (GMC) referral (26.3% depression, 22.3% anxiety). Doctors with current/recent complaints were 2.08 (95% CI=1.61,2.68) times more likely to report thoughts of self-harm or suicidal ideation. Most doctors reported defensive ~~medical~~ practice: 82-89% hedging and 46-50% avoidance. 20% ~~reported~~ felt victimized after whistleblowing, 38% ~~felt~~ being bullied. 27% spent overmore than one a month off work. Over 80% felt processes would improve with transparency, managerial competence, capacity to claim ~~for~~ lost earnings and act against vexatious complainants.

Conclusions: doctors with recent/current complaints have significant risks of moderate/severe depression, anxiety, and suicidal ideation. Morbidity was greatest in cases involving the GMC. Most doctors reported practicing defensively including avoidance of procedures and high-risk patients. Many felt victimised as whistleblowers or reported ~~bull~~ bullying ~~ied in relation to complaints. F. Suggestions to~~ actors ~~ited to~~ improve complaints processes included transparency and managerial competence.

Strengths and limitations of this study

Strengths

- One of the largest reported on this subject with 10,930 respondents and 7,926 completing the survey
- Respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions.
- We have obtained quantitative data on mental wellbeing using validated questionnaires.

Limitations

- The main limitation of the study was the overall response rate of 11.4%. Accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. On the other hand doctors were being asked to comment on their regulators, and those most traumatised by the complaints process may have avoided engaging with the survey. Doctors who have been erased from the register or changed profession would not have been contacted.
- The cross-sectional design does not enable causation to be elucidated
- We collected responses from doctors who have not experienced a complaint but observed the impact on others. This means that the “no complaints” group may have more psychological morbidity than if doctors could be isolated from complaints processes completely. This may result in relative risks in the paper being underestimated.
- Some questions involved remembering past events and the possibility of recall bias must also be considered.
- There were missing responses for a number of questions. However this was dealt with using multiple imputation. However we are reassured that no major differences between the conclusions that would be drawn using complete cases compared to those where data was missing and imputed were found.

Introduction

In the United Kingdom (UK), the General Medical Council (GMC) acts as the regulator and sets standards that doctors are expected follow. It has the power to warn, suspend, restrict the practice of doctors or permanently remove them from the register. These powers are established under the Medical Act (1983).

It was recently disclosed that 96 doctors have died since 2004 while involved in ~~General Medical Council (GMC) fitness to practice proceedings~~, ~~information that came to light following a freedom of information request by the group doctors4justice~~. In parallel to this, between 2011 and 2012 the number of doctors referred to the GMC increased by 18%¹. ~~Although m~~Most doctors referred to the GMC have their case closed at triage or have no action taken², ~~there can be~~. ~~In a recent article in the British Medical Journal (BMJ), Clare Dyer described some of the~~ harrowing consequences for some doctors who ~~go have been~~ through a GMC investigation³.

However the GMC represents only the tip of the iceberg ~~in terms~~ of the complaints system. These include formal and informal both internal hospital trust internal enquiries investigations, the possibility of a serious untoward incident (SUI) investigations enquiry and as well as disputes with managers and colleagues. Whilst there are some data relating to how doctors respond to GMC investigations, to our knowledge there are no studies addressing the issue of complaints procedures below this level in the UK. For many doctors, the prospect of facing a complaint or professional dispute causes them significant stress. This can manifest itself in how they perform in clinical practice and/or in their personal life, and may lead to both physical and psychological symptoms.

Clearly complaints and investigations when things go wrong are part of the checks and balances that should ensure appropriate oversight of a doctor’s performance, the overall aim being to protect patients and maintain appropriate clinical standards. However the regulatory burden and stress associated with a complaints process may not lead to the outcomes that are desired.

In a previous study of surgeons surveyed in the United States (US), malpractice litigation was significantly associated with burnout, depression and suicidal ideation⁴.

There are also data to suggest that medical errors are associated with ~~burnout~~, depression and loss of empathy in the physician responsible⁵. None of these outcomes are likely to ~~lead to improve~~ ~~ments in~~ patient care. A further study has shown suicidal ideation in over 6% of US surgeons, over twice the background rate in the population. In this study, burnout, depression, and involvement in a recent medical error were strongly and independently associated with suicidal ideation after controlling for other personal and professional characteristics. Most surgeons in this study were reluctant to seek professional help due to concerns that there may be an impact on their career⁶.

In a study published in the BMJ, Jain and Ogden described the impact of patient complaints on general practitioners in the United Kingdom and reported an association with anger, depression and suicide⁷. It is ~~also~~ important to note they also described clinicians involved in complaints practicing medicine more defensively. Such practice may be broadly categorized into “hedging” and “avoidance”. Hedging is when doctors are overcautious leading for example to over-prescribing, referring too many patients, or over investigation. Avoidance includes not taking on complicated patients, and avoiding certain procedures or more difficult cases. ~~losing confidence, offering a less appropriate service and planning to leave the profession. None of these outcomes can be considered likely to improve patient care and safety. It must be remembered that the GMC itself describes its core function as being to protect patients. So if the complaints system leads to doctors practicing overly defensive medicine, with avoidance of difficult cases and over investigation of patients, then the entire process may lead to more harm than good in terms of patient care.~~

~~Aspects of the complaints process itself may also contribute stressors including the length of time an investigation may take and not knowing whether the case will progress. The adversarial nature of investigations and hearings is a further contributor together with a sense of isolation that many doctors feel. In addition there is uncertainty over the impact on the doctor’s career and often a lack of knowledge of the process. This combination of factors may lead to physical and mental health problems. The GMC has acknowledged that there is stress associated with their procedures and commissioned the British Medical Association (BMA) Doctors for~~

IMPACT study

~~Doctors service to provide confidential emotional support to doctors going through fitness to practice proceedings.~~

The primary aim of this study was to investigate the psychological welfare of doctors who have observed or experienced both past and/or current complaints. The secondary aim of the study was to assess whether being involved in or witnessing a complaints process leads to doctors reporting that they practice medicine defensively.

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IMPACT study

Methods

Design

The study used a cross-sectional survey design where participants were streamed into three groups: current/recent complaint (on-going or resolved within the last 6 months), past complaint (resolved more than 6 months ago), and no complaints. Each group completed a slightly different version of the questionnaire. Participants in the current complaints and no complaints group were asked about their current mood and health whereas the past complaints group were also asked to respond about their mood and health at the time of the complaint.

Ethical approval was obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Participants

The British Medical Association (BMA) is an apolitical professional association and independent trade union that represents doctors and medical students in the UK, membership is voluntary. Members of the BMA in November 2012 who had pre-consented to being contacted for research purposes were invited to participate (n=95,636). They were emailed a link to an online encrypted questionnaire using Survey Monkey® and an information sheet describing the study. Participants were guaranteed that their responses were anonymous and untraceable. The survey remained open for two weeks and three reminders were sent out about the study during this time. A total of 10,930 (11.4%) participants responded to the survey. Of these, 696 (6.4%) were excluded as they only completed the demographics section, and 121 (1.1%) participants were excluded because a technical error meant that they were given the wrong sections to complete. A further 2187 (20.0%) participants completed the demographics section and indicated whether they had had a complaint and they were partially included in the analysis (sample 1). A total of 7926 (72.5%) participants completed the survey (sample 2). Of these, 1380 omitted some sections of

the survey but were included in the full analysis. Demographic information in relation to both samples is shown in table 1.

In order to check that our sample was representative, we compared our study population with the total BMA membership database (see table 1). This showed that our sample was broadly representative in terms of gender (46.3% females in the BMA membership database compared to 47.5% females in both sample 1 and 2) and place of qualification (80.1% qualified in the United Kingdom in the BMA population compared to 80.7% in sample 1 and 81.2% in sample 2). Our study population consisted of more doctors in the 35-59 age range (49.8% in the BMA population compared to 74.8% in sample 1 and 73.4% in sample 2), ethnic minorities were under-represented (32.4% in the BMA population compared to 22.4% in sample 1 and 21.8% in sample 2), and consultants and GPs were over-represented (27.2% were consultants and 26% were GPs in the BMA population compared to 37.1% and 38.4% in sample 1 and 36.5% and 37.8% in sample 2) whilst junior doctors and retired doctors were underrepresented (26.4% were juniors and 8.6% were retired in the BMA population compared to 15.7% and 0.7% in sample 1 and 16.5% and 0.7% in sample 2).

Measures

A pilot of the questionnaire trialed on 20 medical doctors of varying grades and specialties and their feedback was incorporated in the questionnaire design (see details below). In total, 108 questions were asked to the no complaints group and 179 questions were asked to both the complaints groups. Based on filling in trial questionnaires, we estimate the time required to complete the questionnaire was approximately 30 minutes. The questionnaire is included as supplementary online information (supplementary file 1) or can be reviewed by using the following link: <https://www.surveymonkey.com/s/P55KH5P>

Having completed 13 items obtaining demographic information (including age, specialty, gender, marital status, ethnicity, place of training, marital status, and details about their employment), participants were separated into three streams based on

whether they had i) a current/recent complaint (within the past 6 months), ii) past complaint, or iii) no current or past complaints.

The different types of complaint or investigation that were considered in the study are outlined below:

Informal: an informal complaint usually involves a patient speaking directly to the people involved in their care in order to resolve their concerns. It can be escalated to a formal complaint if not resolved locally.

Formal: this is a written complaint usually to the chief executive or an employing organization that triggers an investigation and often requires a written response within a set time period and may lead to disciplinary action or referral to the GMC.

Serious Untoward Incident (SUI): the definition of an SUI is wide ranging and includes an unexpected death, poor clinical outcome, a hazard to public health, a trend leading to reduced standards of care, damage to reputation or confidence in a service or adverse media coverage or public concern about an organization. The aim is to prevent recurrence of the adverse event, but may lead to disciplinary action for individuals or referral to the GMC.

General Medical Council: a complaint can be made about a doctor for issues ranging from personal behavior outside work to clinical concerns about their practice. The GMC review cases and have the power to suspend doctors from practice during an investigation. This may lead to a warning or referral to a tribunal that has the power to restrict a doctor's practice, impose working under supervision, suspension from the medical register or remove a doctor from the register permanently. The GMC may also issue warnings and undertakings to doctors to change aspects of their behavior or practice.

All participants completed the following sections (although some individual items varied in the different streams):

Experience of complaint: Participants in both complaints groups were asked 75 questions about their complaint(s) generated from Bark and colleagues⁸ and the pilot study. This included their total number of complaints, the most significant complaint and followed by a series of questions about the most serious complaint if they had had

more than one, including the reason for the complaint, the origin, the duration, the outcome, the cost (i.e. any leave taken, the estimated financial cost), and the level of support sought and obtained during the complaint. Participants who had been referred to the GMC were also asked to rate how stressful they found each aspect of the procedure. Whilst the majority of the questions used a 5-point scale, some questions were qualitative and a few were yes/no.

Attitudes towards complaints: All groups were asked ten questions using a 5-point scale generated from the pilot study about their attitudes toward complaints, the causes of complaints, and their perceived threat of future complaints. The no complaints group was asked 11 additional questions about their attitudes towards the complaints process (e.g., “I believe that complaints are reasonably dealt with”) and how well they perceive that they would be supported in the event of a complaint made against them (e.g., “If I had a complaint made against me, I am confident that my management would support me”).

Suggestions to improve the complaints process. All groups were asked to rate different suggestions on how to improve the complaints process on 11 5-point items. These proposals were generated from the pilot study.

Medical history: The presence of common stress-related illnesses at the time of the complaint or currently were measured using 12 items, including recurring infections, gastro-intestinal, sleep, cardio-vascular and mood problems^{9, 10}. In addition, questions were asked about self-reported drug and alcohol use, as well as life stressors at the time of both current and past complaints.

Defensive medical practice: Twenty items measuring current defensive medical practice were generated from a literature review^{10,11,12}. 12 items additional items were generated from the pilot study (5 for the no complaints group). Items were either rated on a 5-point scale or a yes/no response.

Depression: The *Physical Health Questionnaire (PHQ-9)*¹³ is a well-known standardised screening measure assessing the presence and severity of depression. It has been used across a wide range of populations and demonstrated good

psychometric properties. Respondents were considered depressed if they scored 10 or more on the PHQ-9¹⁴.

Anxiety: The *Generalised Anxiety Disorder* scale (GAD-7)¹⁵ is a standardised screening measure assessing the presence and severity of generalized anxiety disorder. The GAD-7 is also moderately good at identifying panic disorder, social anxiety disorder, and post-traumatic stress disorder. It has been used across a wide range of populations and demonstrated good psychometric properties. Respondents were considered anxious if they scored 10 or more on the GAD-7¹⁵.

Life Satisfaction. Life satisfaction was assessed with 10 items using a 6-point scale asking about satisfaction-dissatisfaction with marriage, career, recreation/leisure, self/family, and life satisfaction/optimism.

Statistical analysis

For the purpose of this paper, we have limited ourselves to analysis of psychological welfare and health (i.e. anxiety, depression, stress-related illness), defensive practice, culture, time off work and suggestions for improving the complaints process. To summarise the fifteen items measuring defensive practice, an exploratory factor analysis was conducted which identified two underlying factors. The first involves over-investigation and overly cautious management, which we have termed “hedging” (9 items, including for example “carried out more tests than necessary”, “referred patient for second opinion more than necessary” and “admitted patients to the hospital when the patient could have been discharged home safely or managed as an outpatient”, Cronbach’s $\alpha=0.92$). The second involves avoiding difficult aspects of patient treatment, which we termed “avoidance” (3 items, “stopped doing aspects of my job”, “not accepting high risk patients in order to avoid possible complications”, and “avoiding a particular type of invasive procedure”, Cronbach’s $\alpha=0.77$). Due to strongly skewed distributions, the sumscores hedging and avoidance were analysed both as dichotomous (any hedging (>0)/avoidance (>0) versus no hedging (0)/avoidance (0)) and ordinal variables (never (0), rarely (hedging 1-12, avoidance 1-4), sometimes (hedging 13-24, avoidance 5-8) or often (hedging 25-36, avoidance 9-12) displaying hedging or avoidance behavior.)

The statistical analysis mainly consisted of descriptive analyses. Cross-tabulations of psychological welfare and defensive practice indicators have been made and relative risks were computed to investigate the relationship between complaint group and psychological welfare or defensive practice indicators. Additionally, means within the complaint groups and mean differences have been computed for continuous variables such as depression and anxiety. Asymptotic 95% confidence intervals were computed for relative risks and mean differences. Unpooled standard errors of the mean difference were used when necessary. Proportions and their 95% confidence intervals were also computed for feeling bullied during the investigation, feeling victimized because of whistle blowing and the amount of time spent off work. Proportions were computed to investigate the amount of support of respondents to various proposed actions to improve the complaints process.

As the primary aim of this study was to investigate the impact of complaints on the psychological welfare and health of doctors, a logistic regression analysis was performed to assess the relationship between moderate to severe depression and receiving a complaint, while controlling for predefined confounders (age, gender, being in a relationship, being White British, and medical specialty). Interactions of complaint with the confounders were included if necessary ($\alpha=0.001$). Proportional odds logistic models were constructed to investigate whether hedging or avoidance are associated with characteristics of the complaint process (length of investigation, timing of complaint, outcome of investigation, origin of the complaint, type of the complaint). For hedging and avoidance, all two-way interactions were of interest and were included if necessary ($\alpha=0.001$). We checked linearity assumptions, the presence of multi-collinearity, the presence of outliers, and the proportional odds assumption when necessary.

There was substantial item non-response. For key variables such as depression, anxiety, hedging and avoidance, non-response was approximately 20%. Missing ~~data~~ness was addressed by performing multiple imputation ~~using chained equations~~ (MICE)¹⁶ ~~with 10 iterations~~. Missing ~~responses~~values were ~~replaced~~imputed by 100 ~~plausible values~~times, ~~based on available responses to other questions~~, leading to 100 completed datasets ~~that represent the uncertainty about the right value to impute~~. For

composite scales (depression, anxiety and hedging), a two-step approach to imputation was used to decrease the computational burden and make appropriate use of the available answers to separate items, first imputing the respondent's individual mean of non-missing items if at least 80% of the items of the composite scale were non-missing, followed by multiple imputation (MI) at the scale level for the remaining individuals. For avoidance, the three items were individually imputed. Multiple imputation was performed using chained equations (MICE)¹⁶ with 10 iterations. After MI, each completed dataset was analysed separately and results combined using standard Rubin's rules (Rubin, 1987). To assess the impact of item non-response, we performed a sensitivity analysis comparing the results of the complete case analysis to the results after MI, which assumes missingness at random. Additionally, MI assuming missingness not at random (informative missings) was considered for key variables depression, anxiety, hedging and avoidance¹⁷. Since these variables are based on responses to sensitive questions, informative missingness is plausible. As a missingness mechanism we assumed that those respondents with missingness might have been more anxious or depressed, or more likely to display hedging behavior or avoidance. More details on the MNAR analysis can be found in the supplementary file.

The data was analysed using SAS (version 9.3, SAS Institute, Cary, NC, USA). Multiple imputations were performed using IVEware (<http://www.isr.umich.edu/src/smp/ive/>)¹⁸.

Results

Psychological welfare and health

Overall, 16.9% of doctors with recent or ongoing complaints reported clinically significant symptoms of moderate to severe depression (table 2). Doctors in this group were at increased risk of depression compared to those with a past complaint (7.8%) or no personal experience of a complaint (9.5% Table 2; RR=1.77, 95% CI=1.48, 2.13). This was the case even when controlling for the effects of gender, age (cubic effect), being in a relationship (yes/no), being White British (yes/no), and medical specialty. The effect of having a recent or current complaint depends on gender.

When there has been no complaint, men tend to be less likely to be depressed than women (OR=0.76, 95% CI=0.54, 1.09), but a recent or current complaint has a higher impact on men than on women (OR women=1.72, 95% CI=1.28, 2.30; OR men=2.86, 95% CI 2.04, 4.01]. Within the PHQ-9, doctors with an ongoing or recent complaint (9.7%) were twice as likely as doctors with no complaints (4.7%) to report having thoughts of self-harm or suicidal ideation (RR=2.08, 95% CI=1.61, 2.68; see table 2). The sensitivity analysis shows that this conclusion holds under various assumed missingness mechanisms (see supplementary figure 1~~file 1~~, supplementary table 1). Moreover, 15% of doctors in the recent complaints group reported clinically significant levels of anxiety on the GAD-7, which is twice as likely as doctors who have no complaints (see Table 2, 7.3%, RR= 2.08, 95% CI=1.61, 2.68). Also this conclusion holds under various assumed missingness mechanisms (see supplementary file 1, supplementary table 2).

The level of psychological distress was related to the type of complaints procedure. Doctors going through a GMC referral reported the highest levels of depression (26.3%), anxiety (22.3%) and thoughts of self-harm (15.3%) compared to SUIs (16.1%, 15.3% and 9.3% respectively), formal complaints (15.6%, 13.5% and 9.0%), and informal complaints (12%, 12% and 6.4%) (table 3).

When asked directly using a single item scale, doctors were 3.78 (95% CI=2.68, 5.32) times more likely to report the presence of suicidal thoughts whilst going through a current or recent complaint compared to doctors who had no complaints (table 4).

Doctors who have experienced either a recent or past complaint reported higher levels of health problems at the time of the complaint compared to the no complaint group. These included gastro-intestinal problems, subjective anxiety and depression, anger, other mental health problems, insomnia, relationship problems, and frequent headaches. Doctors in the current complaints group also reported higher levels of cardio-vascular problems (see table 4).

Defensive practice

Overall, 84.7% of doctors with a recent and 79.9% with a past complaint reported changing the way they practiced medicine as a result of the complaint. 72.7% of doctors with no previous complaint reported changing their practice having observed a colleague's experience of a complaint (see ~~Table 5~~).

88.6% of doctors with a recent or current complaint and 82.6% of those with a past complaint displayed hedging behaviour. 81.7% of doctors with no previous complaints reported hedging. The sensitivity analysis revealed that under the MNAR assumption, the conclusion still holds that people in the recent or current complaint group display more hedging behavior than people in the no complaints group, but also people with a past complaint display considerably more hedging behavior (see supplementary ~~figure 1~~, supplementary table3).

49.8% of doctors with a recent or current complaint, 42.9% of doctors with a past complaint, and 46.1% of doctors with no personal experience of a complaint reported avoidance behaviour having observed a colleague's experience of a complaint. Although the results from the complete case analysis support the conclusion that mostly people in the recent and current complaint group display avoidance behaviour, the results from the analysis under the MNAR assumption suggest that it is people with a past complaint who display most avoidance behaviour (see ~~supplementary figure 1~~, supplementary table 4).

The multivariable proportional odds analysis indicated that the odds of more severe hedging are higher for people with a recent or ongoing complaint than for people with a past complaint (OR 1.33 95% CI=1.19, 1.49) (~~Table 6~~). The odds of hedging slightly increased with the length of time of the investigation (OR 1.01 per month, 95% CI=1.00, 1.01). Hedging was increased when retraining was imposed (OR 1.62, 95% CI=0.84, 3.13) and decreased when the doctor was suspended from practice (OR 0.56, 95% CI=0.26, 1.18). The odds of hedging also decreased when the complaint came from medical colleagues (OR 0.67, 95% CI=0.53, 0.86). There was evidence of an interaction between the type of the most serious complaint one has experienced and whether or not the complaint came from a patient (see ~~supplementary figure 1~~). Hedging was higher when the complaint came from a patient, this was most clear for

informal (OR=3.16, 95% CI=2.17, 4.58) and formal complaints (OR=2.18, 95% CI=1.67, 2.85). When the complaint did not come from a patient, hedging was higher for formal complaints, SUI's and GMC referrals compared to informal complaints (OR=1.52, 95% CI=1.03, 2.24, OR=2.10, 95% CI=1.31, 3.35 and OR=1.78, 95% CI=1.15, 2.71, respectively).

As with hedging, the multivariable analysis indicated that the odds of more severe avoidance increased with the length of time the investigation (OR 1.01 per month, 95% CI=1.01, 1.02), and was higher for people with a recent or current complaint than for people with a past complaint (OR 1.20, 95% CI=1.07, 1.35) (Table 7). Avoidance was also increased when the investigation resulted in imposed retraining (OR 1.79, 95% CI=1.0, 3.09). Avoidance behaviour most severely increased when the complaint came from a patient group (OR 1.71, 95% CI=1.02, 2.87) or management (OR 1.59, 95% CI=1.16, 2.16), or when the complaint was anonymous (OR 1.58, 95% CI=1.06, 2.36). The type of complaint did not meaningfully influence the odds of more severe avoidance.

Overall, as a result of their experience of the complaints process, 23% of doctors reported suggesting invasive procedures against their professional judgement, and 14% reported becoming more likely to abandon a procedure at an early stage.

Culture and time off work

20% (95% C.I. 19% to 22%) reported that they felt victimized because they had been a whistleblower for clinical or managerial dysfunction. 38% (95% C.I. 37% to 40%) of people who have had a complaint, recently or in the past, reported feeling bullied during the investigation.

60% (95% C.I. 57% to 64%) spent less than a week off work. However, 27% (95% C.I. 24% to 30%) of people with complaints spent more than a month off work.

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Opinions on changes to improve the system

Of those doctors that gave a response, 85% felt that for managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them mattered quite a lot or a great deal in terms of improving the process. An equal number (85%) felt that if a doctor is exonerated but has suffered financial loss during the process, then they should have the option to make a claim for recovery of lost earnings or costs and in addition that there should be complete transparency of any management communication about the subject of a complaint and that access to such communications should be given to a doctor's representatives. Seventy-four percent74% of respondents felt that it mattered quite a lot or a great deal that if a complaint from a clinical or managerial colleague was found to be vexatious then this could be investigated and possible disciplinary measures taken. The full details of responses in relation to actions that could be taken to reduce the psychological impact of complaints processes are shown in supplementary table 5.

Discussion

We have shown that doctors who responded to our questionnaire who have recently received a complaint of any kind are 77% more likely to suffer from moderate to severe depression than people who have never had a complaint. They also have double the risk of having thoughts of self-harm, and double the risk of anxiety. Welfare is lowest when the complaint involves referral to the GMC. Doctors with a recent or current complaint also reported that they suffered from an increased likelihood of cardiovascular and gastro-intestinal disorders, depression, anxiety, anger and irritability, suicidal thoughts, sleep difficulty, relationship problems, and frequent headaches than people who had not been through a complaints process. In many cases these problems persisted. We have also shown that 80% of doctors answering the survey reported changing the way they practiced as a result of either complaints against themselves, or after observing a colleague go through a complaints process. The majority (84%) of doctors reported hedging behaviour in response to a complaint (i.e. increased defensive practice) whilst many (46%) admitted avoidance. A further important finding was that many doctors who had a complaint (20%) felt they were victimised after whistle blowing. ~~Thirty-nine percent reported that they felt bullied when they were going through the process, and 27%. A large number of doctors had more than a month off work significant time off work as a result of a complaint, with 27% spending more than a month off work.~~

A strength of the study is that to our knowledge it is one of the largest reported on the subject involving 10,930 respondents with 7,926 completing the survey. It is certainly the largest relating to doctors in the ~~UK~~ United Kingdom. We ~~also~~ think it is critical that respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions. Furthermore we have obtained quantitative data on the mental wellbeing of doctors using validated questionnaires. It is also important to note that we have collected responses from doctors who have not experienced a complaint but observed the impact on others. On the one hand this gives insight into the impact of observing a colleague going through a complaints process, however it also means that the “no complaints” group may have a higher overall level of psychological morbidity than if doctors could be isolated from complaints processes completely. Hence the relative

risks in the paper may be underestimated. A significant limitation of the study is that the response rate was 11.4%, accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. What constitutes an acceptable response rate is a subject of debate, however our response rate is clearly low¹⁹. We believe this is inevitable when asking doctors to comment on disciplinary processes and in particular on their regulator. Even if we take the view that the respondents are a selected group, they still demonstrate that a very considerable number of doctors are significantly impacted by complaints processes and practice defensively. It must also be remembered that doctors that have been most traumatised by the complaints process may have felt unable to take part in the survey and a small number are known to have committed suicide. Furthermore those no longer on the register (for example if they have changed profession or erased from the register) are unlikely to be members of the BMA and so would not have been contacted. As some questions involved remembering past events the possibility of recall bias for some answers must also be considered. For a number of questions there were missing responses. However we have considered this issue by using multiple imputation and were reassured that we found no essential differences between the conclusions that would be drawn using complete cases compared to those where missing data have been imputed.

As with any cross-sectional survey we must be careful when considering the findings, as we cannot show causation. It is possible that doctors with depression, anxiety and suicidal ideation are more likely to have complaints made against them, similarly being complained against may be the causative factor rather than the processes themselves. However this still means the information presented is important as if we take the former view, it means those going through complaints processes are a vulnerable group that need support. This was illustrated in a recent study that reported that sick doctors under investigation stated that the processes and communication style employed by the GMC were often distressing, confusing, and perceived to have impacted negatively on their mental health and ability to return to work²⁰.

It is interesting that our findings are similar to a questionnaire-based study of surgeons in the United States examining the emotional toll of malpractice lawsuits. This study found significantly more depression and burnout in surgeons who had

recently been exposed to a lawsuit and highlighted the association between burnout and the likelihood of making a medical error⁴.

We found that 10% of doctors responding to the survey who have had a recent complaint have had thoughts of self-harm and are over twice as likely to have had such thoughts compared to doctors who had not personally experienced a complaint. When referral to the GMC is looked at in isolation the number of doctors who reported suicidal ideation reached 15.3%, whilst 26.3% had moderate to severe depression and 22.3% had moderate to severe anxiety on the basis of two validated instruments. Even set against the limitations of the study we have highlighted above, these findings are concerning. In a recent feature article in the BMJ, Dyer reported on the high number of suicides associated with GMC proceedings³. Our results support the view that these proceedings have a disproportionate impact on doctors, especially as the vast majority of doctors who are referred to the GMC are found to have no significant case to answer². However the GMC is at the apex of what amounts to a “complaints pyramid” and our data show similar significant psychological morbidity for doctors ~~across the entire spectrum of complaints procedures. when they are involved both in internal trust enquiries into complaints and in the event of a serious untoward incident investigation.~~

The incidence of feeling victimized following whistleblowing (20%) and bullying (38%) will be a concern to those trying to build a culture in the UK National Health Service (NHS) where it is safe to speak out about clinical and managerial concerns. The Francis report highlighted the dysfunctional culture that is prevalent in many NHS organisations²¹⁰. Other ~~recent~~ reports have also highlighted serious concerns about the pressures that may be placed on hospital staff²²¹. Given the large numbers involved, our study supports the view that whistleblowing in the NHS NHS is often not ~~always~~ a safe action ~~to take~~, that bullying is not uncommon, and that ~~these is~~ problems are ~~is not just experienced in~~ isolated eventseases.

The GMC exists to protect patients and the public. This is also the aim of other types of complaints processes with the overall purpose being to learn from mistakes and improve the performance of everyone taking part in patient care. However as with all interventions there may be unforeseen consequences. Previously Jain et al in a qualitative study reported that many general practitioners practice defensively

following a complaint⁷. Our data also show the vast majority of doctors who took part in the study reported engaging in defensive practice. This ~~included involved hedging and avoidance behavior; which included~~ carrying out more tests than necessary, over-referral, over-prescribing, avoiding procedures, not accepting high-risk patients and abandoning procedures early. Nash and colleagues have also reported high levels of defensive practice²³. In their study which had a higher response rate of 36%, 43% of doctors reported that they referred more patients, 55% ordered more tests and 11% stated they prescribed more medications than usual in response to medico-legal concerns. In a further report the same authors showed that doctors working in high-intervention areas of medicine are more likely to be the subject of medico-legal complaints²⁴. Defensive practice in such specialties may be particularly concerning.

These behaviors are not in the interest of patients and may cause harm, whilst they may also potentially increase ~~the cost of health care provision to the wider NHS~~. By far the majority of doctors who are reported to the GMC are not found to have a significant case to answer², as is probably the case with other lower level complaint investigations. It therefore does not seem unreasonable to argue that as they currently function, GMC enquiries may do more overall harm than good in terms of patient care. As the “complaints pyramid” is descended it is possible this balance may improve, although we found defensive practice across the entire spectrum of complaints processes.

Whilst we fully acknowledge the limitations associated with any study of this type, we believe our findings have implications for policy makers. Procedures must exist to enable patients to make a complaint about their care, for professionals to raise concerns about standards of practice and for ~~serious~~ untoward events to be investigated. However a system that is associated with high levels of psychological morbidity amongst those going through it is not appropriate as either the subjects of such procedures are vulnerable at the outset or are suffering such morbidity as a direct result of the investigations themselves. -Most importantly, a system that leads to so many doctors practicing defensive medicine is not good for patients. A further concern for patient care is the association between doctor’s distress, burnout and decreased empathy with perceived medical errors²⁵.

~~The high level of suicidal ideation coupled with the recent revelations about suicide amongst doctors who have been reported to the GMC is a concern³. Recently the GMC announced a review of cases of doctor suicide associated with GMC investigations, and introduced offering emotional support to doctors going through fitness to practice procedures. A survey has also been sent out by the GMC to doctors to hear their views. These initiatives are welcome, but whether doctors will feel confident in giving critical feedback to the GMC is open to question. No such initiatives have been made to support doctors involved in other processes outside GMC proceedings, whilst our data suggest that psychological morbidity as well as hedging and avoidance behaviour is associated with the entire spectrum of complaints procedures. A further concern for patient care is the association between doctor's distress, burnout and decreased empathy with perceived medical errors²¹.~~

When asked how the complaints process could be improved doctors indicated that what mattered to them was that the process should be transparent and that ~~staff~~managers responsible for investigating complaints should be up to date and competent. There was also a clear feeling that in the event of a complaint being shown to be vexatious then there should be disciplinary consequences if this related to ~~managers and colleagues~~hospital staff, or the option for financial redress in the event it related to patients. ~~Doctors indicated that in the event of a complaint they expected any procedure to be clear, transparent, follow due process and in the event that the complaint was shown to be vexatious, that there are consequences for those involved.~~ Concerns about the lack of redress associated with vexatious complaints have been raised in the BMJ before²⁶³. This highlights the inherent tension in the system whereby an apparent "whistleblower" may be perceived as a vexatious complainant by a colleague. ~~The logical extension of increased transparency and greater training and therefore competency amongst managers responsible for dealing with complaints would be consistency. Consistency in both the management and outcome of complaints would be valuable in restoring the sense of fairness that our results would suggest is not currently being perceived by doctors.~~

We have shown that doctors who responded to our questionnaire and experience or observe complaints processes exhibit high levels of psychological morbidity including severe depression and suicidal ideation. These effects are greatest when the process

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involves the General Medical Council. In addition the majority of these doctors exhibit hedging and avoidance, both these behaviours may be damaging to patient care and be contrary to the professed aims of these processes.

For peer review only

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Contributors

TB conceived of the original idea for the study, interpreted results, drafted the paper and is overall guarantor. MJ designed the questionnaire, obtained ethical approval, contributed to the preparation of the data set, interpreted results and contributed to drafts of the paper. LW and BVC carried out the statistical analysis and contributed to drafts of the papers. MP contributed to the study design, interpretation of results and commented on drafts of the paper. DT and CVA contributed to interpretation of results and commented on drafts of the paper. All authors approved the final version of the manuscript.

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Competing interests

All authors have completed the Unified Competing Interest form and declare: Michael Peters is head of the BMA doctors for doctors unit and so receives payment from the BMA. The BMA had no role in data collection, design of the study, data analysis, interpretation of data, or writing the report and had no influence over whether to submit the manuscript. All other authors stated that they had no support from any organisation for the submitted work; no financial relationships with any organisations

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that might have an interest in the submitted work in the previous three years, no other relationships or activities that that could appear to have influenced the submitted work

Ethical approval

Ethical approval was sought and obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Transparency declaration

The lead author (T Bourne) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no aspects of the study have been omitted in relation to the specific aspects of the study reported in this paper; and that any discrepancies from the study as planned (and, if relevant registered) have been explained.

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Tables and Figures

Table 1: Demographic information relating to both sample 1 and 2 in the study

Age	Total BMA membership consented for research	Sample 1 (n=10113)	Sample 2 (n=7926)
Up to 25	17.8%	1.4%	1.4%
26-29	9.0%	5.1%	5.5%
30-34	9.6%	8.6%	8.8%
35-39	10.3%	11.0%	11.0%
40-44	10.3%	13.5%	13.1%
45-49	10.8%	16.9%	16.8%
50-54	10.3%	18.8%	18.8%
55-59	8.1%	14.6%	14.7%
60-64	5.0%	6.6%	6.4%
65-69	3.0%	2.5%	2.6%
Over 69	5.9%	1.1%	1.0%
Gender	46.3% Female	47.5% Female	47.5% Female
Place of qualification			
United Kingdom	80.1%	80.7%	81.2%
India	8.2%	6.6%	6.2%
Pakistan	2.2%	1.2%	1.2%
Ireland	0.9%	1.4%	1.4%
Nigeria	1.1%	1.2%	1.2%
Germany	0.7%	1.1%	1.2%
South Africa	0.7%	0.8%	0.8%
Other	6.2%	6.9%	6.9%
Ethnicity			
White British	67.6%	77.6%	78.2%
Asian or Asian British	23.3%	16.6%	15.8%
Black or Black British	3.5%	2.3%	2.3%
Chinese or Chinese British	2.9%	1.3%	1.3%
Mixed	2.7%	2.3%	2.3%
Grade:			

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Academics	2.1%	1.2%	1.3%
Consultants	27.2%	37.1%	36.5%
General Practice	26.0%	38.4%	37.8%
Junior Doctors	26.4%	15.7%	16.5%
SASC	5.3%	5.8%	6.11%
Retired	8.6%	0.7%	0.7%
Other or no answer	4.4%	1.0%	1.1%

Table 2. Symptoms severity and relative risk of psychological distress for each complaints group.

	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Depression (PHQ-9)						
Mean (SD) ^a	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
Thoughts of 'self-harm' n (%)	83 (4.7%)	221 (5.7%)	218 (9.7%)	522 (6.6%)	1.22 (0.93, 1.61)	2.08 (1.61, 2.68)
Anxiety (GAD-7)						
Mean (SD) ^b	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe anxiety n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 3. Psychological distress within the recent / on-going complaints group by complaint that had the most impact.

	Informal complaint n=362 (16.0%)	Formal Complaint n=1196 (53.0%)	SUI n=280 (12.4%)	GMC referral n=374 (16.6%)	No complaint n=1780 (22.5%)
Depression (PHQ-9)					
Mean (SD) ^a	4.2 (5.0)	4.8 (5.4)	5.1 (5.6)	6.6 (6.7)	3.7 (4.3)
Moderate to severe depression n (%)	45 (12.0%)	190 (15.6%)	46 (16.1%)	100 (26.3%)	169 (9.5%)
Thoughts of ‘self-harm’ n (%)	24 (6.4%)	110 (9.0%)	27 (9.3%)	58 (15.3%)	83 (4.7%)
Anxiety (GAD-7)					
Mean (SD) ^b	3.8 (4.3)	4.4 (4.7)	4.7 (5.1)	5.7 (5.7)	3.1 (3.8)
Moderate to severe anxiety n (%)	44 (12.0%)	165 (13.5%)	44 (15.3%)	85 (22.3%)	131 (7.3%)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 4. Psychosomatic health for each of the complaints group. Please note that the past complaints group used retrospective information asking about worsening or onset of symptoms at the time of the complaint, whereas the no and recent complaint groups were asked about the presence of symptoms in the last twelve months.

	No complaint n=1780 (22.5%)	Recent or current complaint n=2257 (28.5%)	Past complaint n=3889 (49.1%)	RR recent or current versus no complaint.
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	124 (7.0%)	280 (12.4%)	405 (10.4%)	1.78 (1.44-2.20)
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	217 (12.2%)	426 (18.9%)	934 (24.0%)	1.55 (1.32-1.82)
Depression	187 (10.5%)	490 (21.7%)	1148 (29.5%)	2.07 (1.74-2.45)
Anxiety	476 (26.7%)	1108 (49.1%)	3045 (78.3%)	1.84 (1.65-2.04)
Anger and irritability	358 (20.1%)	928 (41.1%)	2406 (61.9%)	2.04 (1.77-2.35)
Other mental health problems	12 (0.7%)	54 (2.4%)	256 (6.6%)	3.45 (1.80-6.60)
Suicidal thoughts	44 (2.5%)	211 (9.3%)	519 (13.4%)	3.78 (2.68-5.32)
Sleep problems / insomnia	479 (26.9%)	1137 (50.4%)	288 (74.1%)	1.87 (1.67-2.10)
Relationship problems	187 (10.5%)	458 (20.3%)	911 (23.4%)	1.94 (1.63-2.30)
Frequent headaches	242 (13.6%)	432 (19.2%)	1027 (26.4%)	1.41 (1.19-1.65)
Minor colds	492 (27.6%)	509 (22.5%)	5447 (14.0%)	0.82 (0.73-0.92)
Recurring respiratory infections	77 (4.3%)	143 (6.3%)	306 (7.9%)	1.47 (1.11-1.95)

Table 5 Defensive practice according to complaint group

Because of your/other's experiences with complaints, have you....	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Changed the way of practicing medicine n (%)	1294 (72.7%)	3106 (79.9%)	1912 (84.7%)	6312 (79.6%)	1.10 (1.06,1.14)	1.17 (1.13,1.21)
Displayed hedging behaviour n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
Displayed avoiding behaviour n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
Suggested invasive procedures against professional judgement n (%)	359 (20.2%)	902 (23.2%)	585 (25.9%)	1846 (23.3%)	1.15 (1.02,1.29)	1.29 (1.13,1.46)
Become more likely to abandon a procedure at an early stage n (%)	248 (14.0%)	515 (13.3%)	372 (16.5%)	1136 (14.3%)	0.95 (0.80,1.13)	1.18 (1.00,1.39)
Become less committed and worked strictly to job description n (%)	-	795 (20.5%)	613 (27.2%)		-	-

Table 6. Factors influencing hedging behaviour.

Odds Ratio Estimates for hedging			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.006	1.002	1.011
Recent or current complaint (versus past complaint)	1.331	1.193	1.485
Outcome of investigation			
No fault/ exonerated (yes versus no)	1.051	0.676	1.633
Retraining imposed (yes versus no)	1.622	0.913	2.885
Disciplinary action (yes versus no)	0.815	0.433	1.532
Suspended from practice (yes versus no)	0.557	0.289	1.075
Struck off from the register (yes versus no)	0.583	0.754	1.761
The process was not clearly concluded (yes versus no)	1.152	0.900	1.960
Where did the complaint come from			
Trust (yes versus no)	1.328	0.900	1.960
Medical colleagues (yes versus no)	0.672	0.526	0.860
Management (yes versus no)	0.797	0.581	1.094
Media (yes versus no)	1.084	0.467	2.515
Patient group (yes versus no)	1.495	0.906	2.464
Other health care professional (yes versus no)	1.047	0.798	1.375
Patient (yes versus no)			
For informal complaint	3.155	2.172	4.584
For formal complaint	2.180	1.670	2.846
For SUI	1.212	0.826	1.778
For GMC referral	1.670	1.207	2.311
Anonymous (yes versus no)	1.362	0.922	2.012
Type of complaint			
Formal complaint versus informal complaint			
Complaint did not come from a patient	1.521	1.034	2.239
Complaint came from a patient	1.051	0.903	1.223
SUI versus informal complaint			
Complaint did not come from a patient	2.097	1.311	3.352
Complaint came from a patient	0.805	0.648	1.002
GMC referral versus informal complaint			
Complaint did not come from a patient	1.776	1.164	2.709
Complaint came from a patient	0.940	0.757	1.168

Table 7. Factors influencing avoidance behaviour

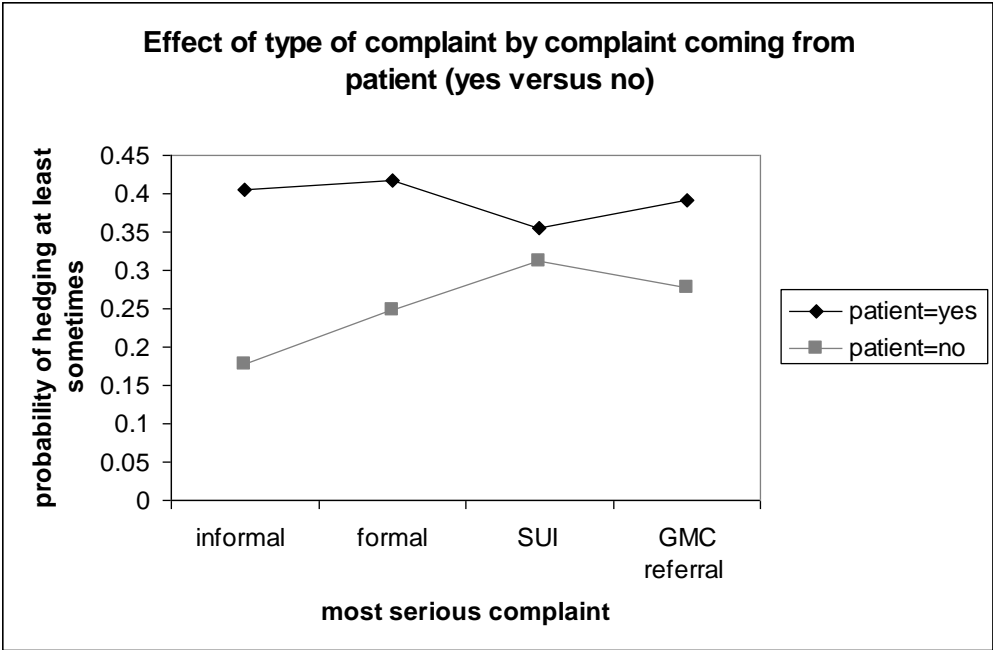
Odds Ratio Estimates for avoiding			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.011	1.006	1.016
Recent or current complaint (versus past complaint)	1.201	1.069	1.350
Outcome of investigation			
No fault/ exonerated (yes versus no)	0.893	0.594	1.340
Retraining imposed (yes versus no)	1.787	1.033	3.092
Disciplinary action (yes versus no)	1.211	0.682	2.152
Suspended from practice (yes versus no)	1.066	0.566	2.008
Struck off from the register (yes versus no)	0.626	0.119	3.305
The process was not clearly concluded (yes versus no)	1.202	0.805	1.796
Where did the complaint come from			
Trust (yes versus no)	1.338	0.910	1.968
Medical colleagues (yes versus no)	1.439	1.134	1.826
Patient (yes versus no)	1.364	1.114	1.670
Management (yes versus no)	1.585	1.163	2.161
Media (yes versus no)	0.866	0.380	1.972
Patient group (yes versus no)	1.708	1.019	2.866
Other health care professional (yes versus no)	1.326	1.015	1.731
Anonymous (yes versus no)	1.580	1.057	2.360
Type of complaint			
GMC referral (versus informal complaint)	1.082	0.885	1.323
SUI (versus informal complaint)	1.112	0.904	1.368
Formal complaint (versus informal complaint)	1.036	0.893	1.203

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Supplementary online material

Supplementary figure 1: Effect of type of complaint on hedging behavior by origin of complaint.



Supplementary material sensitivity analysis and supplementary tables 1-4

Sensitivity Analysis.

As a last step in the analysis, we performed a sensitivity analysis considering also missingness not at random (MNAR) for some of the key analyses. MNAR means that, even accounting for all the available observed information, the reason for observations being missing still depends on the unseen observations themselves. We performed a simple sensitivity analysis, assuming as a not ignorable missing model that depression, anxiety, hedging and avoiding are worse when the value is missing. Therefore, after multiple imputation under the MAR assumption using MICE, I increased each imputed value of depression (PHQ9) and anxiety (GAD7) by a certain number d . This number d was obtained as follows. First, a random number δ was sampled from a normal distribution with mean the estimated standard deviation of the distribution of PHQ9/GAD7, and standard deviation the square root of this value. Then $d = \max(\delta, 1)$, such that d is restricted to imply an increase in PHQ9/GAD7. Therefore, d instead of δ is added to the imputed value under missingness at random (MAR). After this, the new imputed value is rounded and bound at the maximum possible value, such that an integer number on the original scale is obtained. For hedging/avoiding, all missings were assumed to have displayed at least some hedging/avoiding behaviour. The actual score on the scale is irrelevant, because the scale is dichotomised prior to the analysis. After the imputations under MNAR are computed, analysis proceeds as usual, using Rubin's rules to combine results.

Supplementary table 1: Sensitivity analysis for PHQ-9

Depression (PHQ-9) ^a	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	255 (14%)	1144 (29%)	214 (9%)	1613 (20%)		
Complete case						
Mean (SD)	3.8 (4.5)	3.4 (4.6)	5.2 (5.8)	4.1 (5.0)	-0.4 (-0.7, 0.1)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	160 (10.5%)	254 (9.3%)	363 (17.8%)	777 (12.3%)	0.88 (0.73, 1.06)	1.69 (1.42,2.02)
MI MAR						
Mean (SD)	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48,2.13)
MI MNAR						
Mean (SD)	4.3 (4.6)	4.7 (4.8)	5.4 (5.7)	4.8 (5.1)	0.4 (0.1, 0.7)	1.1 (0.8, 1.4)
Moderate to severe depression n (%)	238 (13.4%)	593 (15.2%)	432 (19.2%)	1263 (15.9%)	1.14 (0.95, 1.35)	1.43 (1.21,1.70)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

Supplementary table 2: Sensitivity analysis for GAD-7

Anxiety (GAD7) ^b	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	258 (14%)	1148 (30%)	201 (9%)	1607 (20%)		
Complete case						
Mean (SD)	3.2 (3.9)	3.0 (4.0)	4.7 (5.0)	3.6 (4.4)	-0.2 (-0.4, 0.1)	1.5 (1.2, 1.8)
Moderate to severe depression n (%)	123 (8.1%)	194 (7.1%)	330 (16.1%)	647 (10.2%)	0.88 (0.71, 1.09)	1.99 (1.63, 2.42)
MI MAR						
Mean (SD)	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)
MI MNAR						
Mean (SD)	3.7 (4.1)	4.3 (4.4)	4.9 (5.0)	4.3 (4.6)	0.5 (0.2, 0.9)	1.2 (0.9, 1.5)
Moderate to severe depression n (%)	173 (9.7%)	463 (11.9%)	374 (16.6%)	1011 (12.75%)	1.22 (0.98, 1.51)	1.71 (1.35, 2.18)

^bThe GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Supplementary table 3: Sensitivity analysis for hedging.

Because of your / other's experiences with complaints, have you ever displayed hedging behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	268	1241	273	1782		
Complete case						
n (%)	1222 (80.8%)	2135 (80.6%)	1752 (88.3%)	5109 (83.1%)	1.00 (0.97,1.03)	1.09 (1.06,1.13)
MAR						
n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
MI MNAR						
n (%)	1484 (83.4%)	3369 (86.6%)	2023 (89.6%)	6876 (86.8%)	1.04 (1.01,1.06)	1.08 (1.05,1.10)

Supplementary table 4: Sensitivity analysis for avoidance.

Because of your / other's experiences with complaints, have you ever displayed avoiding behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	242	1222	257	1721		
Complete case						
n (%)	705 (45.8%)	1137 (42.6%)	995 (49.8%)	2837 (45.7%)	0.93 (0.87,1.00)	1.09 (1.01,1.16)
MAR						
n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
MI MNAR						
n (%)	947 (53.2%)	2359 (60.7%)	1252 (55.5%)	4558 (57.5%)	1.14 (1.08,1.20)	1.04 (0.98,1.10)

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Supplementary table 5: How doctors ranked the importance of different actions that might be taken to improve the complaints process might be improved (note these data are not imputed).

	Not at all n (%)	A little n (%)	To some extent n (%)	Quite a lot n (%)	A great deal n (%)	missing n	total n
To allow the doctor to have more direct input into responses to patient complaints	245 (3.9%)	313 (5.0%)	2256 (35.8%)	1524 (24.2%)	1973 (31.3%)	3802	10113
To be given a clear written protocol for any process at the onset	217 (3.4%)	342 (5.4%)	1501 (23.8%)	1846 (29.3%)	2400 (38.1%)	3807	10113
To have strict adherence to a statutory timeframe for any complaint and investigation process	199 (3.2%)	402 (6.4%)	1599 (25.3%)	1732 (27.5%)	2379 (37.7%)	3803	10113
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	261 (4.2%)	440 (7.1%)	1816 (29.2%)	1972 (31.7%)	1733 (27.9%)	3891	10113
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	152 (2.4%)	202 (3.2%)	1202 (19.3%)	1981 (31.8%)	2690 (43.2%)	3886	10113
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	212 (3.4%)	434 (6.9%)	1296 (20.6%)	1528 (24.2%)	2837 (45.0%)	3806	10113
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	131 (2.1%)	260 (4.2%)	1315 (21.1%)	1855 (29.8%)	2668 (42.8%)	3884	10113
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	64 (1.0%)	138 (2.2%)	785 (12.4%)	1872 (29.7%)	3455 (54.7%)	3799	10113
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	59 (1.0%)	102 (2.2%)	757 (12.4%)	1770 (28.3%)	3559 (57.0%)	3866	10113
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	65 (1.0%)	107 (1.7%)	767 (12.3%)	1744 (28.0%)	3551 (57.0%)	3879	10113

Bourne et al

The BMA and defence organisations should be more aggressive and less reactive to complaints in general	186 (3.0%)	447 (7.1%)	1601 (25.5%)	1465 (23.4%)	2575 (41.0%)	3839	10113
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The IMPACT study

1. Consent to participate in the study

This is an electronic form of consent for the study. By ticking the boxes below, you agree to take part in the study.

All information that you provide is ANONYMOUS and CONFIDENTIAL and held in strictest confidence. You will not be asked to provide any information that can be used to identify you nor can you be identified by us by filling in any part of this survey.

1. I consent to the use of my survey results to better understand the impact of complaints and investigations on doctors and their practice.

☐ Yes

☐ No

2.

3. Demographics

This section will ask you some general questions about you and your background.

2. How old are you?

3. What is your gender?

☐ Female

☐ Male

4. What is your Marital Status?

5. What is your Ethnic Origin?

6. In which year did you qualify?

7. If you qualified outside the UK, in which year did you come to the UK to practice medicine?

8. If relevant, in which year did you complete your specialist training?

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The IMPACT study

9. In which country did you complete your medical training?

10. Where is your principal workplace? (where you spend the majority of your working time)

- ☐ GP surgery
- ☐ Elsewhere in primary care
- ☐ District general hospital
- ☐ University teaching hospital
- ☐ Academic institution
- ☐ Private practice clinic/hospital

Other (please specify)

11. What is your specialty?

Other (please specify)

12. Is your current post

- ☐ Part time
- ☐ Part time - Locum
- ☐ Full time
- ☐ Full time - Locum
- ☐ Self-employed contractor

13. What is your grade?

Other (please specify)

14. How long have you worked in your current post?

4. Informal and formal complaints

The IMPACT study

15. Have you ever been subjected to an informal complaint, formal complaint or serious untoward incident?

- ☐ No
- ☐ Yes, and it is either ongoing or was resolved within the past 6 months
- ☐ Yes, and it was resolved more than 6 months ago

5. About your complaint

16. Please enter how many of each of the following you have had

	0	1	2	3	4	5	6	7	8	9	10+
Informal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serious untoward incidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referrals to the GMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. If applicable, which complaint or incident had the most impact on you?

Optional comments

18. What was the reason given to you for your complaint / referral to the GMC (if more than one, please select the most serious allegation)?

- ☐ Clinical complaint
- ☐ Clinical performance (i.e. concerns raised about your practice generally)
- ☐ Personal conduct (e.g. dishonesty, affairs with patients)
- ☐ Criminal offence (e.g. dangerous driving, fraud)

19. Where did the complaint come from?

	Yes	No
Trust	<input type="checkbox"/>	<input type="checkbox"/>
Medical colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Patient	<input type="checkbox"/>	<input type="checkbox"/>
Management	<input type="checkbox"/>	<input type="checkbox"/>
Media	<input type="checkbox"/>	<input type="checkbox"/>
Patient group	<input type="checkbox"/>	<input type="checkbox"/>
Other health care professional	<input type="checkbox"/>	<input type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>

20. How long ago was your (most recent) complaint / investigation concluded?

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21. How long (in months) did the investigation take?
If more than one, please select the most serious allegation
If the investigation is ongoing, please enter the length of time it has taken up to this point

22. If you were referred to the GMC for a procedure, how long did that take (in months)?
If it is still ongoing, please state how long it has taken up to this point

23. How stressful did you find the following aspects of the GMC procedure?

	Extremely stressful	2	Somewhat stressful	4	Not at all stressful	N/A
The initial GMC investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to hold a Fitness to Practice hearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Fitness to Practice hearing itself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. What was the outcome of the complaint / procedure?

- ☐ No fault / exonerated
- ☐ Retraining imposed
- ☐ Disciplinary action
- ☐ Suspended from practice
- ☐ Struck off from the register
- ☐ The process was not clearly concluded
- Other (please specify)
-

25. At any point during the investigation(s), did you

	Yes	No
Take sick leave	<input type="radio"/>	<input type="radio"/>
Take unpaid leave	<input type="radio"/>	<input type="radio"/>
Have supervised practice	<input type="radio"/>	<input type="radio"/>
Have restrictions placed on your practice	<input type="radio"/>	<input type="radio"/>
Were you suspended	<input type="radio"/>	<input type="radio"/>
Did your restrictions also include your private practice (if applicable)	<input type="radio"/>	<input type="radio"/>

26. How long were you off work in total?

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27. Please estimate the direct financial costs (e.g. travel, legal fees, etc. in GBP) to you as a result of the investigation (if relevant)

28. Please estimate the indirect financial costs (e.g. loss of earnings, in GBP) to you as a result of the investigation (if relevant)

29. At any point of the inquiry, did you do any of the following

	Yes	No
Speak to family / friends about it	<input type="radio"/>	<input type="radio"/>
Speak to your colleagues about it	<input type="radio"/>	<input type="radio"/>
Represent yourself	<input type="radio"/>	<input type="radio"/>
Access support from a medical professional support organisation	<input type="radio"/>	<input type="radio"/>
Engage an independent solicitor or barrister	<input type="radio"/>	<input type="radio"/>
Were your case or the complaint published in the media (including social media)	<input type="radio"/>	<input type="radio"/>
Access support from the BMA employment advice service	<input type="radio"/>	<input type="radio"/>
Access support from the BMA counselling / other support organisation	<input type="radio"/>	<input type="radio"/>

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The IMPACT study

30. As a consequence of the inquiry, to what extent do you agree/disagree with the following statements

	Strongly Agree	2	Neutral	4	Strongly Disagree	N/A
The potential consequences of the enquiry were clear to me throughout the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clearly understood the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The process was transparent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going through the process, I felt that I was assumed guilty until proven otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt as if I had been scapegoated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had no control over what was happening to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt alone in the proceedings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My complaint was primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my medical professional support organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my defence organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that there were unnecessary delays in the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my complaint was handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was worried about the complaint escalating further	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the consequences were proportionate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the nature of the process was overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The IMPACT study

31. To what extent did the following apply in relation to the process of the complaint or procedure you experienced

	Not at all	2	To some extent	4	Definitely
Normal process was not followed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The documentary record such as minutes produced by the investigative body was fair and accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time scale for the investigation was needlessly protracted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was kept well informed of when or if I could bring representation to meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe there was inappropriate or vexacious use of the hospital clinical risk process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the complaint arose because of dysfunctional relationships within the clinical team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt victimised because I had been a whistleblower for clinical or managerial failures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical issues were found after the initial complaint and used against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt bullied during the investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt managers used the process to undermine my position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt clinical colleagues used the process to gain an advantage either financially or professionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

32. During the inquiry, to what extent were you worried about the following outcomes

	A lot	2	To some extent	4	Not at all
Loss of livelihood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having aspects of your clinical practice restricted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a marked record in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Currently, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

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34. To what extent do you agree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. About complaints in general

35. In general, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

The IMPACT study

36. To what extent do you agree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37. To what extent do you agree/disagree with the following statements?

	Strongly Agree	2	Neutral	4	Strongly Disagree
Complaints are primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my management would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my colleagues would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my medical professional support organisation would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my defence organisation would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that complaints are reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the consequences are proportionate in the complaints process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Medical History

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38. In the past 12 months, have you suffered from any of the following health conditions or stressors (please tick all that apply)?

- ☐ Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)
- ☐ Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)
- ☐ Depression
- ☐ Anxiety
- ☐ Anger & irritability
- ☐ Other mental health problems
- ☐ Suicidal thoughts
- ☐ Sleep problems / insomnia
- ☐ Marital / relationship problems
- ☐ Frequent headaches
- ☐ Minor colds
- ☐ Recurring respiratory infections

If yes - please specify

39. In the past 12 months, have you experienced any additional life stressors (e.g. bereavement, accident, etc.)

- ☐ Yes
- ☐ No

If yes please specify

40. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

- ☐ Yes, in the past (more than 6 months ago)
- ☐ Yes, currently (in the last 6 months)
- ☐ No

8. Possible legal consequences and professional practice

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

The IMPACT study

41. How often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals than warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters about a patient than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

42. If you have answered "Never" to all the questions above, please omit this question.
Which of the following factors are important?
(please tick all boxes relevant to you)

	Yes	No
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)		

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The IMPACT study

43. As a result of what you know about the complaints process, have you

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that are considered high risk of complaints	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Become less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
Become more likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Felt that you have learnt from others' experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>	

44. Indicate the extent you feel that any of the following changes would improve the complaints process?

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Medical History (ii)

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45. In the past 12 months, have you suffered from any of the following health conditions or stressors (please tick all that applies):

- ☐ Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)
- ☐ Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)
- ☐ Depression
- ☐ Anxiety
- ☐ Anger & irritability
- ☐ Other mental health problems
- ☐ Suicidal thoughts
- ☐ Sleep problems / insomnia
- ☐ Marital / relationship problems
- ☐ Frequent headaches
- ☐ Minor colds
- ☐ Recurring respiratory infections

If yes - please specify

46. In the past 12 months, have you experienced any additional life stressors (e.g. bereavement, accident, etc.)

- ☐ Yes
- ☐ No

If yes, please specify

47. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

- ☐ Yes, in the past (more than 6 months ago)
- ☐ Yes, currently (in the last 6 months)
- ☐ No

10. Legal consequences and professional practice (ii)

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

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48. How often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals even when this is not warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

49. If you have answered "Never" to all the questions above, please omit this question.

Which of the following factors are important?
(please tick all boxes relevant to you)

	Yes	No
Previous experience of complaints about you	<input type="radio"/>	<input type="radio"/>
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<div></div>	

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50. As a result of your experience do any of the following apply?

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that led to the complaint	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
More likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Moved into a non-clinical role	<input type="radio"/>	<input type="radio"/>
You have become less committed and work strictly to your job description	<input type="radio"/>	<input type="radio"/>
You have learnt from the experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>
Left medicine and started a new career	<input type="radio"/>	<input type="radio"/>
The complaint or the way you were treated was related to discrimination	<input type="radio"/>	<input type="radio"/>
Retired early	<input type="radio"/>	<input type="radio"/>
Reduced your hours in the NHS to minimise your time there	<input type="radio"/>	<input type="radio"/>
Stopped working for the NHS and decided to work only in private practice or practice medicine elsewhere	<input type="radio"/>	<input type="radio"/>
Other (please specify)		

51. Indicate the extent you feel that any of the following changes would improve the process

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and with possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. About your complaint (iii)

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52. Please enter how many of each of the following you have had

	0	1	2	3	4	5	6	7	8	9	10+
Informal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serious untoward incidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referrals to the GMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

53. If applicable, which complaint or incident had the most impact on you?

Optional comments

54. What was the reason for your complaint / referral to the GMC (if more than one, please select the most serious allegation)?

- ☐ Clinical complaint
- ☐ Clinical performance (i.e. concerns raised about your practice generally)
- ☐ Personal conduct (e.g. dishonesty, affairs with patients)
- ☐ Criminal offence (e.g. dangerous driving, fraud)

55. Where did the complaint come from?

	Yes	No
Trust	<input type="checkbox"/>	<input type="checkbox"/>
Medical colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Patient	<input type="checkbox"/>	<input type="checkbox"/>
Management	<input type="checkbox"/>	<input type="checkbox"/>
Media	<input type="checkbox"/>	<input type="checkbox"/>
Patient group	<input type="checkbox"/>	<input type="checkbox"/>
Other health care professional	<input type="checkbox"/>	<input type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>

56. How long ago was your (most recent) complaint / investigation concluded?

57. How long (in months) did the investigation take (if more than one, please select the most serious allegation)?

58. If you were referred to the GMC for a process, how long did that take (in months)?

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59. If applicable, how stressful did you find the following aspects of the GMC process?

	Extremely stressful	2	Somewhat stressful	4	Not at all stressful	N/A
The initial GMC investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to hold a Fitness to Practice hearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Fitness to Practice hearing itself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

60. What was the outcome of the complaint / process?

- ☐ No fault / exonerated
- ☐ Retraining imposed
- ☐ Disciplinary action
- ☐ Suspended from practice
- ☐ Struck off from the register
- ☐ The process was not clearly concluded

Other (please specify)

61. At any point during the investigation(s), did you

	Yes	No
Take sick leave	<input type="radio"/>	<input type="radio"/>
Take unpaid leave	<input type="radio"/>	<input type="radio"/>
Have supervised practice	<input type="radio"/>	<input type="radio"/>
Have restrictions placed on your practice	<input type="radio"/>	<input type="radio"/>
Were you suspended	<input type="radio"/>	<input type="radio"/>
Did your restrictions also include your private practice (if applicable)	<input type="radio"/>	<input type="radio"/>

62. How long were you off work in total?

63. Please estimate the direct financial costs (e.g. travel, legal fees, etc. in GBP) to you as a result of the investigation (if relevant)

64. Please estimate the indirect financial costs (e.g. loss of earnings in GBP) to you as a result of the investigation (if relevant)

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65. At any point of the inquiry, did you

	Yes	No
Speak to family / friends about it	<input type="radio"/>	<input type="radio"/>
Speak to your colleagues about it	<input type="radio"/>	<input type="radio"/>
Represent yourself	<input type="radio"/>	<input type="radio"/>
Access support from a medical professional support organisation	<input type="radio"/>	<input type="radio"/>
Engage an independent solicitor or barrister	<input type="radio"/>	<input type="radio"/>
Were your case or the complaint published in the media (including social media)	<input type="radio"/>	<input type="radio"/>
Access support from the BMA employment advice service	<input type="radio"/>	<input type="radio"/>
Access support from the BMA counselling / other support organisation	<input type="radio"/>	<input type="radio"/>

66. As a consequence of the inquiry, to what extent do you agree/disagree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree	N/A
The potential consequences of the enquiry were clear to me throughout the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clearly understood the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The process was transparent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going through the process, I felt that I was assumed guilty until proven otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt as if I had been scapegoated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had no control over what was happening to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt alone in the proceedings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My complaint was primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my medical professional support organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my defence organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that there were unnecessary delays in the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my complaint was handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was worried about the complaint escalating further	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the consequences were proportionate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the nature of the process was overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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67. To what extent did the following apply in relation to the process of the complaint or procedure you experienced?

	Not at all	2	To some extent	4	Definitely
Normal process was not followed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The documentary record such as minutes produced by the investigative body was fair and accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time scale for the investigation was needlessly protracted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was kept well informed of when or if I could bring representation to meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe there was inappropriate or vexacious use of the hospital clinical risk process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the complaint arose because of dysfunctional relationships within the clinical team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt victimised because I had been a whistleblower for clinical or managerial failures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical issues were found after the initial complaint and used against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt bullied during the investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt managers used the process to undermine my position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt clinical colleagues used the process to gain an advantage either financially or professionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

68. During the inquiry, to what extent were you worried about the following outcomes?

	A lot	2	To some extent	4	Not at all
Loss of livelihood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having aspects of your clinical practice restricted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a marked record in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

69. Currently, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

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70. To what extent do you agree with the following statements?

	Definitely agree	2	Neutral	4	Definitely disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Medical History (iii)

71. When you were facing the investigation, did you experience any of the following?

	Improvement	No change	Onset of	Worsening of
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anger & irritability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other mental health problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suicidal thoughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep problems / insomnia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relationship problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequent headaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minor colds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recurring respiratory infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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72. During the process, did you experience any additional life stressors (e.g. bereavement, accident, etc.)

☐ Yes

☐ No

If yes please specify

73. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

☐ Yes, in the past (more than 6 months ago)

☐ Yes, currently (in the last 6 months)

☐ Yes, during the investigation

☐ No

13. Legal consequences and professional practice (iii)

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

74. As a result of your experience, how often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals than warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters about a patient than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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75. If you have answered "Never" to all the questions above, please omit this question. Which of the following factors are important? (please tick all boxes relevant to you)

	Yes	No
Previous experience of complaints about you	<input type="radio"/>	<input type="radio"/>
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>	

76. As a result of your experience do any of the following apply?

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that led to the complaint	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
More likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Moved into a non-clinical role	<input type="radio"/>	<input type="radio"/>
You have become less committed and work strictly to your job description	<input type="radio"/>	<input type="radio"/>
You have learnt from the experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>
Left medicine and started a new career	<input type="radio"/>	<input type="radio"/>
The complaint or the way you were treated was related to discrimination	<input type="radio"/>	<input type="radio"/>
Retired early	<input type="radio"/>	<input type="radio"/>
Reduced your hours in the NHS to minimise your time there	<input type="radio"/>	<input type="radio"/>
Stopped working for the NHS and decided to work only in private practice or practice medicine elsewhere	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>	

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77. Indicate the extent you feel that any of the following changes would improve the process

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and with possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. PHQ-9 & GAD-7

78. Over the last 2 WEEKS, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling down, depressed, or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble falling or staying asleep, or sleeping too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling tired or having little energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor appetite or overeating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling bad about yourself — or that you are a failure or have let yourself or your family down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble concentrating on things, such as reading the newspaper or watching television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thoughts that you would be better off dead or of hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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79. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- ☐ Not difficult at all
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ Extremely difficult

80. Over the last 2 WEEKS, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being able to stop or control worrying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worrying too much about different things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being so restless that it is hard to sit still	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming easily annoyed or irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling afraid as if something awful might happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. LDI

This scale is intended to estimate your current level of satisfaction with each of the eighteen areas of your life listed below. Please circle one of the numbers (1-7) beside each area. Numbers toward the left end of the seven-unit scale indicate higher levels of dissatisfaction, while numbers toward the right end of the scale indicate higher levels of satisfaction. Try to concentrate on how you currently feel about each area.

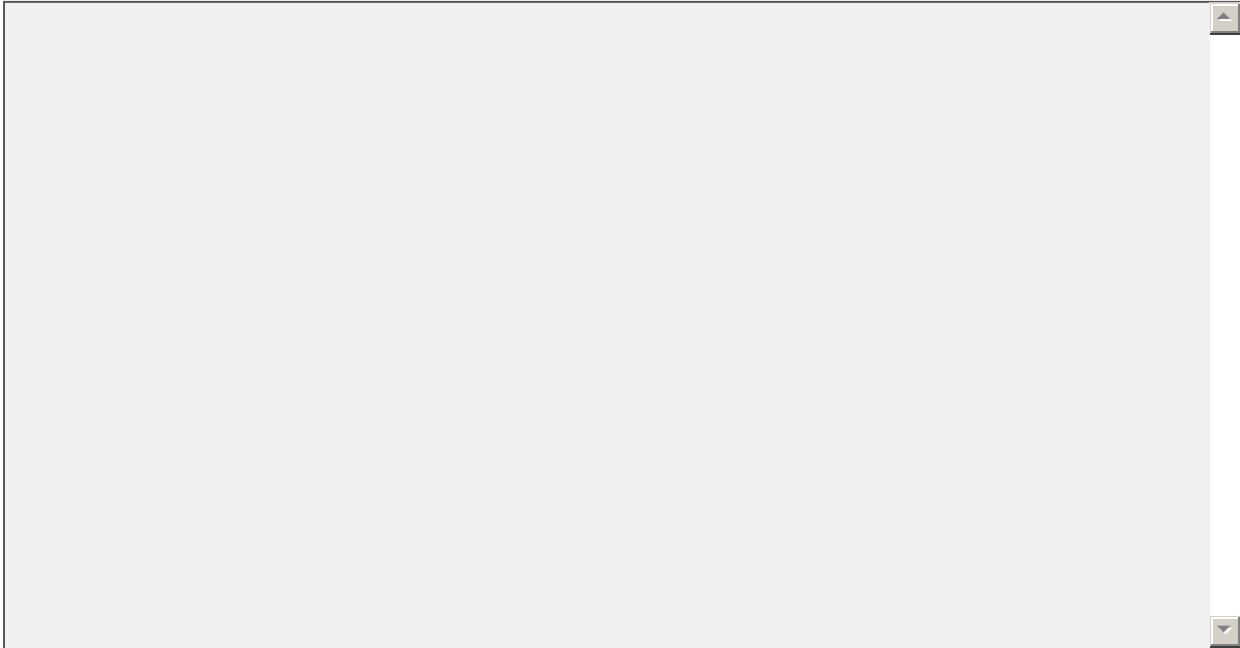
81. Please estimate your current level of satisfaction with each of the following areas of your life.

	1 Extremely dissatisfied	2	3	4	5	6 Extremely satisfied
Marriage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship to spouse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship to children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation/Leisure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Expectations for future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

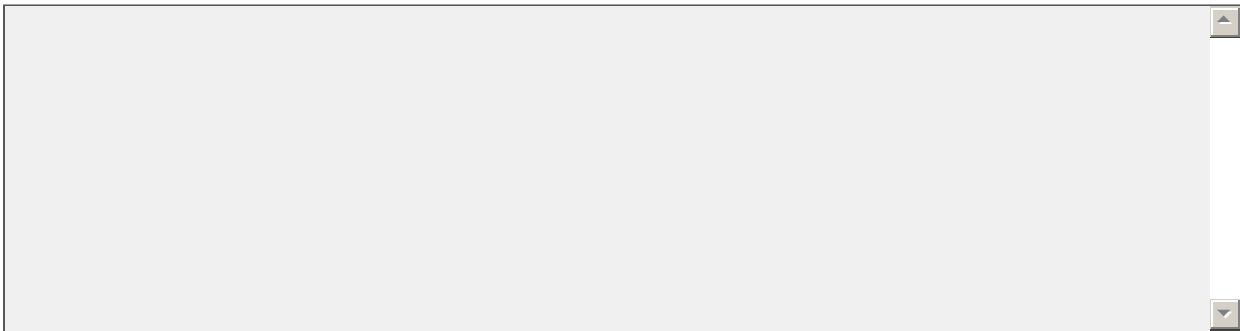
16. Additional information (optional)

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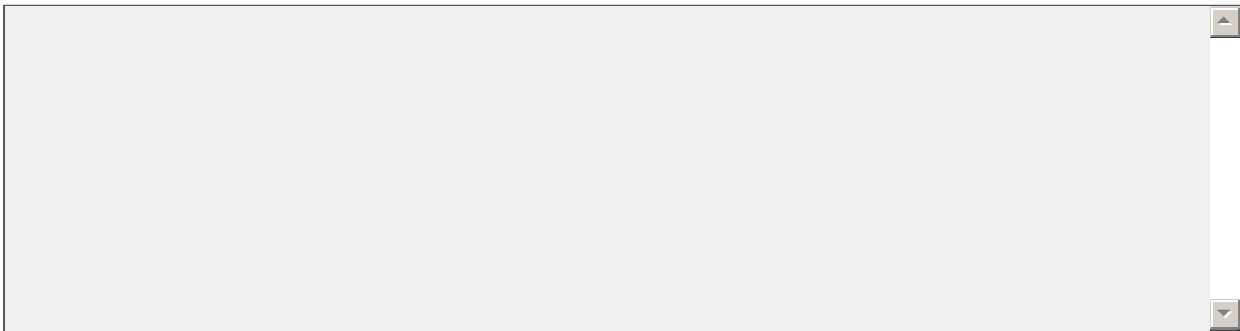
82. (If relevant) Try to summarise as best you can your experience of the complaints process and how it made you feel

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83. (if relevant) What were the most stressful aspects of the complaint?

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84. What would you improve in the complaints system?

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85. Other comments

17. Thank you for taking part in this study

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study’s design with a commonly used term in the title or the abstract	Contained in the title
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8-11
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	8-11
Bias	9	Describe any efforts to address potential sources of bias	COMPARISON OF SAMPLE WITH SAMPLING FRAME: P 8 MISSINGNESS (AT RANDOM/NOT AT RANDOM): p 13
Study size	10	Explain how the study size was arrived at	7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	10-12, 13

Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	11-13
		(b) Describe any methods used to examine subgroups and interactions	12
		(c) Explain how missing data were addressed	12-13
		(d) If applicable, describe analytical methods taking account of sampling strategy	N A
		(e) Describe any sensitivity analyses	13
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	7
		(c) Consider use of a flow diagram	/
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1
		(b) Indicate number of participants with missing data for each variable of interest	12; Supplementary material sensitivity analysis and supplementary tables 1-4
Outcome data	15*	Report numbers of outcome events or summary measures	Table 2 and 3
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	13-14, 15-16
		(b) Report category boundaries when continuous variables were categorized	10, 11
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	/
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	14, Supplementary material sensitivity analysis and supplementary tables 1-4
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and	18-19-

		magnitude of any potential bias	
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	19-20
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	7/24

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

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The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom: a cross-sectional survey

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Manuscripts

The impact of complaints procedures on the welfare, health and clinical practice of 7,926 doctors in the United Kingdom: a cross-sectional survey

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Key words: anxiety, depression, suicide, physicians, regulation

Word count 5634

Abstract

Objectives: the primary aim was to investigate the impact of complaints on doctors psychological welfare and health. The secondary aim was to assess whether doctors report that exposure to a complaints process is associated with defensive medical practice.

Design: cross-sectional anonymous survey study. Participants were stratified into recent/current, past, no complaints. Each group completed tailored versions of the survey.

Participants: 95,636 doctors were invited to participate. 10,930 (11.4%) responded. 7,926 (8.3%) completed the full survey and were included in the complete analysis.

Main outcome measures: anxiety and depression were assessed using the standardised Generalised Anxiety Disorder scale and Physical Health Questionnaire. Defensive practice was evaluated using a new measure. Single-item questions measured stress-related illnesses, complaints-related experience, attitudes towards complaints, and views on improving complaints processes.

Results: 16.9% of doctors with current/recent complaints reported moderate/severe depression (relative risk (RR) 1.77 (95% CI=1.48, 21.3) compared to doctors with no complaints (9.5%)). 15% reported moderate/severe anxiety (RR= 2.08 (95% CI=1.61, 2.68) compared to doctors with no complaints (7.3%)). Distress increased with complaint severity, with highest levels after General Medical Council (GMC) referral (26.3% depression, 22.3% anxiety). Doctors with current/recent complaints were 2.08 (95% CI=1.61, 2.68) times more likely to report thoughts of self-harm or suicidal ideation. Most doctors reported defensive practice: 82-89% hedging and 46-50% avoidance. 20% felt victimized after whistleblowing, 38% felt bullied. 27% spent over one month off work. Over 80% felt processes would improve with transparency, managerial competence, capacity to claim lost earnings and act against vexatious complainants.

Conclusions: doctors with recent/current complaints have significant risks of moderate/severe depression, anxiety, and suicidal ideation. Morbidity was greatest in cases involving the GMC. Most doctors reported practicing defensively including avoidance of procedures and high-risk patients. Many felt victimised as whistleblowers or reported bullying. Suggestions to improve complaints processes included transparency and managerial competence.

Strengths and limitations of this study

Strengths

- One of the largest reported on this subject with 10,930 respondents and 7,926 completing the survey
- Respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions.
- We have obtained quantitative data on mental wellbeing using validated questionnaires.

Limitations

- The main limitation of the study was the overall response rate of 11.4%. Accordingly the findings must be interpreted with caution due to the possibility of ascertainment bias. On the other hand doctors were being asked to comment on their regulators, and those most traumatised by the complaints process may have avoided engaging with the survey. Doctors who have been erased from the register or changed profession would not have been contacted.
- The cross-sectional design does not enable causation to be elucidated
- We collected responses from doctors who have not experienced a complaint but observed the impact on others. This means that the “no complaints” group may have more psychological morbidity than if doctors could be isolated from complaints processes completely. This may result in relative risks in the paper being underestimated.
- Some questions involved remembering past events and the possibility of recall bias must also be considered.
- There were missing responses for a number of questions. However this was dealt with using multiple imputation. However we are reassured that no major differences between the conclusions that would be drawn using complete cases compared to those where data was missing and imputed were found.

Introduction

In the United Kingdom (UK), the General Medical Council (GMC) acts as the regulator and sets standards that doctors are expected follow. It has the power to warn, suspend, restrict the practice of doctors or permanently remove them from the register. These powers are established under the Medical Act (1983).

It was recently disclosed that 96 doctors have died since 2004 while involved in GMC fitness to practice proceedings. In parallel to this, between 2011 and 2012 the number of doctors referred to the GMC increased by 18%¹. Although most doctors referred to the GMC have their case closed at triage or have no action taken², there can be harrowing consequences for some doctors who go through a GMC investigation³.

However the GMC represents only the tip of the iceberg of the complaints system. These include formal and informal hospital internal enquiries, serious untoward incident (SUI) investigations and disputes with managers and colleagues. Whilst there are some data relating to how doctors respond to GMC investigations, to our knowledge there are no studies addressing the issue of complaints procedures below this level in the UK. For many doctors, the prospect of facing a complaint or professional dispute causes them significant stress. This can manifest itself in how they perform in clinical practice and/or in their personal life, and may lead to both physical and psychological symptoms.

Clearly complaints and investigations when things go wrong are part of the checks and balances that should ensure appropriate oversight of a doctor's performance, the overall aim being to protect patients and maintain appropriate clinical standards. However the regulatory burden and stress associated with a complaints process may not lead to the outcomes that are desired.

In a previous study of surgeons surveyed in the United States (US), malpractice litigation was significantly associated with burnout, depression and suicidal ideation⁴. There are also data to suggest that medical errors are associated with depression and loss of empathy in the physician responsible⁵. None of these outcomes are likely to improve patient care. A further study has shown suicidal ideation in over 6% of US surgeons, over twice the background rate in the population. In this study, burnout, depression, and involvement in a recent medical error were strongly and

IMPACT study

independently associated with suicidal ideation after controlling for other personal and professional characteristics. Most surgeons in this study were reluctant to seek professional help due to concerns that there may be an impact on their career⁶.

In a study published in the BMJ, Jain and Ogden described the impact of patient complaints on general practitioners in the United Kingdom and reported an association with anger, depression and suicide⁷. It is important to note they also described clinicians involved in complaints practicing medicine more defensively. Such practice may be broadly categorized into “hedging” and “avoidance”. Hedging is when doctors are overcautious leading for example to over-prescribing, referring too many patients, or over investigation. Avoidance includes not taking on complicated patients, and avoiding certain procedures or more difficult cases.

The primary aim of this study was to investigate the psychological welfare of doctors who have observed or experienced both past and/or current complaints. The secondary aim of the study was to assess whether being involved in or witnessing a complaints process leads to doctors reporting that they practice medicine defensively.

IMPACT study

Methods

Design

The study used a cross-sectional survey design where participants were streamed into three groups: current/recent complaint (on-going or resolved within the last 6 months), past complaint (resolved more than 6 months ago), and no complaints. Each group completed a slightly different version of the questionnaire. Participants in the current complaints and no complaints group were asked about their current mood and health whereas the past complaints group were also asked to respond about their mood and health at the time of the complaint.

Ethical approval was obtained from King's College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Participants

The British Medical Association (BMA) is an apolitical professional association and independent trade union that represents doctors and medical students in the UK, membership is voluntary. Members of the BMA in November 2012 who had pre-consented to being contacted for research purposes were invited to participate (n=95,636). They were emailed a link to an online encrypted questionnaire using Survey Monkey® and an information sheet describing the study. Participants were guaranteed that their responses were anonymous and untraceable. The survey remained open for two weeks and three reminders were sent out about the study during this time. A total of 10,930 (11.4%) participants responded to the survey. Of these, 696 (6.4%) were excluded as they only completed the demographics section, and 121 (1.1%) participants were excluded because a technical error meant that they were given the wrong sections to complete. A further 2187 (20.0%) participants completed the demographics section and indicated whether they had had a complaint and they were partially included in the analysis (sample 1). A total of 7926 (72.5%) participants completed the survey (sample 2). Of these, 1380 omitted some sections of

the survey but were included in the full analysis. Demographic information in relation to both samples is shown in table 1.

In order to check that our sample was representative, we compared our study population with the total BMA membership database (see table 1). This showed that our sample was broadly representative in terms of gender (46.3% females in the BMA membership database compared to 47.5% females in both sample 1 and 2) and place of qualification (80.1% qualified in the United Kingdom in the BMA population compared to 80.7% in sample 1 and 81.2% in sample 2). Our study population consisted of more doctors in the 35-59 age range (49.8% in the BMA population compared to 74.8% in sample 1 and 73.4% in sample 2), ethnic minorities were under-represented (32.4% in the BMA population compared to 22.4% in sample 1 and 21.8% in sample 2), and consultants and GPs were over-represented (27.2% were consultants and 26% were GPs in the BMA population compared to 37.1% and 38.4% in sample 1 and 36.5% and 37.8% in sample 2) whilst junior doctors and retired doctors were underrepresented (26.4% were juniors and 8.6% were retired in the BMA population compared to 15.7% and 0.7% in sample 1 and 16.5% and 0.7% in sample 2).

Measures

A pilot of the questionnaire trialed on 20 medical doctors of varying grades and specialties and their feedback was incorporated in the questionnaire design (see details below). In total, 108 questions were asked to the no complaints group and 179 questions were asked to both the complaints groups. Based on filling in trial questionnaires, we estimate the time required to complete the questionnaire was approximately 30 minutes. The questionnaire is included as supplementary online information (supplementary file 1) or can be reviewed by using the following link: <https://www.surveymonkey.com/s/P55KH5P>

Having completed 13 items obtaining demographic information (including age, specialty, gender, marital status, ethnicity, place of training, marital status, and details about their employment), participants were separated into three streams based on

IMPACT study

whether they had i) a current/recent complaint (within the past 6 months), ii) past complaint, or iii) no current or past complaints.

The different types of complaint or investigation that were considered in the study are outlined below:

Informal: an informal complaint usually involves a patient speaking directly to the people involved in their care in order to resolve their concerns. It can be escalated to a formal complaint if not resolved locally.

Formal: this is a written complaint usually to the chief executive or an employing organization that triggers an investigation and often requires a written response within a set time period and may lead to disciplinary action or referral to the GMC.

Serious Untoward Incident (SUI): the definition of an SUI is wide ranging and includes an unexpected death, poor clinical outcome, a hazard to public health, a trend leading to reduced standards of care, damage to reputation or confidence in a service or adverse media coverage or public concern about an organization. The aim is to prevent recurrence of the adverse event, but may lead to disciplinary action for individuals or referral to the GMC.

General Medical Council: a complaint can be made about a doctor for issues ranging from personal behavior outside work to clinical concerns about their practice. The GMC review cases and have the power to suspend doctors from practice during an investigation. This may lead to a warning or referral to a tribunal that has the power to restrict a doctor's practice, impose working under supervision, suspension from the medical register or remove a doctor from the register permanently. The GMC may also issue warnings and undertakings to doctors to change aspects of their behavior or practice.

All participants completed the following sections (although some individual items varied in the different streams):

Experience of complaint: Participants in both complaints groups were asked 75 questions about their complaint(s) generated from Bark and colleagues⁸ and the pilot study. This included their total number of complaints, the most significant complaint and followed by a series of questions about the most serious complaint if they had had

more than one, including the reason for the complaint, the origin, the duration, the outcome, the cost (i.e. any leave taken, the estimated financial cost), and the level of support sought and obtained during the complaint. Participants who had been referred to the GMC were also asked to rate how stressful they found each aspect of the procedure. Whilst the majority of the questions used a 5-point scale, some questions were qualitative and a few were yes/no.

Attitudes towards complaints: All groups were asked ten questions using a 5-point scale generated from the pilot study about their attitudes toward complaints, the causes of complaints, and their perceived threat of future complaints. The no complaints group was asked 11 additional questions about their attitudes towards the complaints process (e.g., “I believe that complaints are reasonably dealt with”) and how well they perceive that they would be supported in the event of a complaint made against them (e.g., “If I had a complaint made against me, I am confident that my management would support me”).

Suggestions to improve the complaints process. All groups were asked to rate different suggestions on how to improve the complaints process on 11 5-point items. These proposals were generated from the pilot study.

Medical history: The presence of common stress-related illnesses at the time of the complaint or currently were measured using 12 items, including recurring infections, gastro-intestinal, sleep, cardio-vascular and mood problems^{9, 10}. In addition, questions were asked about self-reported drug and alcohol use, as well as life stressors at the time of both current and past complaints.

Defensive medical practice: Twenty items measuring current defensive medical practice were generated from a literature review^{10,11,12}. 12 items additional items were generated from the pilot study (5 for the no complaints group). Items were either rated on a 5-point scale or a yes/no response.

Depression: The *Physical Health Questionnaire (PHQ-9)*¹³ is a well-known standardised screening measure assessing the presence and severity of depression. It has been used across a wide range of populations and demonstrated good

psychometric properties. Respondents were considered depressed if they scored 10 or more on the PHQ-9¹⁴.

Anxiety: The *Generalised Anxiety Disorder* scale (GAD-7)¹⁵ is a standardised screening measure assessing the presence and severity of generalized anxiety disorder. The GAD-7 is also moderately good at identifying panic disorder, social anxiety disorder, and post-traumatic stress disorder. It has been used across a wide range of populations and demonstrated good psychometric properties. Respondents were considered anxious if they scored 10 or more on the GAD-7¹⁵.

Life Satisfaction. Life satisfaction was assessed with 10 items using a 6-point scale asking about satisfaction-dissatisfaction with marriage, career, recreation/leisure, self/family, and life satisfaction/optimism.

Statistical analysis

For the purpose of this paper, we have limited ourselves to analysis of psychological welfare and health (i.e. anxiety, depression, stress-related illness), defensive practice, culture, time off work and suggestions for improving the complaints process. To summarise the fifteen items measuring defensive practice, an exploratory factor analysis was conducted which identified two underlying factors. The first involves over-investigation and overly cautious management, which we have termed “hedging” (9 items, including for example “carried out more tests than necessary”, “referred patient for second opinion more than necessary” and “admitted patients to the hospital when the patient could have been discharged home safely or managed as an outpatient”, Cronbach’s $\alpha=0.92$). The second involves avoiding difficult aspects of patient treatment, which we termed “avoidance” (3 items, “stopped doing aspects of my job”, “not accepting high risk patients in order to avoid possible complications”, and “avoiding a particular type of invasive procedure”, Cronbach’s $\alpha=0.77$). Due to strongly skewed distributions, the sumscores hedging and avoidance were analysed both as dichotomous (any hedging (>0)/avoidance (>0) versus no hedging (0)/avoidance (0)) and ordinal variables (never (0), rarely (hedging 1-12, avoidance 1-4), sometimes (hedging 13-24, avoidance 5-8) or often (hedging 25-36, avoidance 9-12) displaying hedging or avoidance behavior.)

The statistical analysis mainly consisted of descriptive analyses. Cross-tabulations of psychological welfare and defensive practice indicators have been made and relative risks were computed to investigate the relationship between complaint group and psychological welfare or defensive practice indicators. Additionally, means within the complaint groups and mean differences have been computed for continuous variables such as depression and anxiety. Asymptotic 95% confidence intervals were computed for relative risks and mean differences. Unpooled standard errors of the mean difference were used when necessary. Proportions and their 95% confidence intervals were also computed for feeling bullied during the investigation, feeling victimized because of whistle blowing and the amount of time spent off work. Proportions were computed to investigate the amount of support of respondents to various proposed actions to improve the complaints process.

As the primary aim of this study was to investigate the impact of complaints on the psychological welfare and health of doctors, a logistic regression analysis was performed to assess the relationship between moderate to severe depression and receiving a complaint, while controlling for predefined confounders (age, gender, being in a relationship, being White British, and medical specialty). Interactions of complaint with the confounders were included if necessary ($\alpha=0.001$). Proportional odds logistic models were constructed to investigate whether hedging or avoidance are associated with characteristics of the complaint process (length of investigation, timing of complaint, outcome of investigation, origin of the complaint, type of the complaint). For hedging and avoidance, all two-way interactions were of interest and were included if necessary ($\alpha=0.001$). We checked linearity assumptions, the presence of multi-collinearity, the presence of outliers, and the proportional odds assumption when necessary.

There was substantial item non-response. For key variables such as depression, anxiety, hedging and avoidance, non-response was approximately 20%. Missing data was addressed by performing multiple imputation¹⁶. Missing responses were replaced by 100 plausible values based on available responses to other questions, leading to 100 completed datasets that represent the uncertainty about the right value to impute. For composite scales (depression, anxiety and hedging), a two-step approach to

imputation was used to decrease the computational burden and make appropriate use of the available answers to separate items, first imputing the respondent's mean of non-missing items if at least 80% of the items of the composite scale were non-missing, followed by multiple imputation (MI) at the scale level for the remaining individuals. For avoidance, the three items were individually imputed. Multiple imputation was performed using chained equations (MICE)¹⁶ with 10 iterations. After MI, each completed dataset was analysed separately and results combined using standard Rubin's rules (Rubin, 1987). To assess the impact of item non-response, we performed a sensitivity analysis comparing the results of the complete case analysis to the results after MI, which assumes missingness at random. Additionally, MI assuming missingness not at random (informative missings) was considered for key variables depression, anxiety, hedging and avoidance¹⁷. Since these variables are based on responses to sensitive questions, informative missingness is plausible. As a missingness mechanism we assumed that those respondents with missingness might have been more anxious or depressed, or more likely to display hedging behavior or avoidance. More details on the MNAR analysis can be found in the supplementary file.

The data was analysed using SAS (version 9.3, SAS Institute, Cary, NC, USA). Multiple imputations were performed using IVEware (<http://www.isr.umich.edu/src/smp/ive/>)¹⁸.

Results

Psychological welfare and health

Overall, 16.9% of doctors with recent or ongoing complaints reported clinically significant symptoms of moderate to severe depression (table 2). Doctors in this group were at increased risk of depression compared to those with a past complaint (7.8%) or no personal experience of a complaint (9.5%. RR=1.77, 95% CI=1.48, 2.13). This was the case even when controlling for the effects of gender, age (cubic effect), being in a relationship (yes/no), being White British (yes/no), and medical specialty. The effect of having a recent or current complaint depends on gender. When there has been no complaint, men tend to be less likely to be depressed than women (OR=0.76,

95% CI=0.54, 1.09), but a recent or current complaint has a higher impact on men than on women (OR women=1.72, 95% CI=1.28, 2.30; OR men=2.86, 95% CI 2.04, 4.01]. Within the PHQ-9, doctors with an ongoing or recent complaint (9.7%) were twice as likely as doctors with no complaints (4.7%) to report having thoughts of self-harm or suicidal ideation (RR=2.08, 95% CI=1.61, 2.68; see table 2). The sensitivity analysis shows that this conclusion holds under various assumed missingness mechanisms (see supplementary figure 1, supplementary table 1).

Moreover, 15% of doctors in the recent complaints group reported clinically significant levels of anxiety on the GAD-7, which is twice as likely as doctors who have no complaints (see Table 2, 7.3%, RR= 2.08, 95% CI=1.61, 2.68). Also this conclusion holds under various assumed missingness mechanisms (see supplementary file 1, supplementary table 2).

The level of psychological distress was related to the type of complaints procedure. Doctors going through a GMC referral reported the highest levels of depression (26.3%), anxiety (22.3%) and thoughts of self-harm (15.3%) compared to SUIs (16.1%, 15.3% and 9.3% respectively), formal complaints (15.6%, 13.5% and 9.0%), and informal complaints (12%, 12% and 6.4%) (table 3).

When asked directly using a single item scale, doctors were 3.78 (95% CI=2.68, 5.32) times more likely to report the presence of suicidal thoughts whilst going through a current or recent complaint compared to doctors who had no complaints (table 4).

Doctors who have experienced either a recent or past complaint reported higher levels of health problems at the time of the complaint compared to the no complaint group. These included gastro-intestinal problems, subjective anxiety and depression, anger, other mental health problems, insomnia, relationship problems, and frequent headaches. Doctors in the current complaints group also reported higher levels of cardio-vascular problems (table 4).

Defensive practice

Overall, 84.7% of doctors with a recent and 79.9% with a past complaint reported changing the way they practiced medicine as a result of the complaint. 72.7% of doctors with no previous complaint reported changing their practice having observed a colleague's experience of a complaint (table 5).

88.6% of doctors with a recent or current complaint and 82.6% of those with a past complaint displayed hedging behaviour. 81.7% of doctors with no previous complaints reported hedging. The sensitivity analysis revealed that under the MNAR assumption, the conclusion still holds that people in the recent or current complaint group display more hedging behavior than people in the no complaints group, but also people with a past complaint display considerably more hedging behavior (supplementary figure 1, supplementary table3).

49.8% of doctors with a recent or current complaint, 42.9% of doctors with a past complaint, and 46.1% of doctors with no personal experience of a complaint reported avoidance behaviour having observed a colleague's experience of a complaint. Although the results from the complete case analysis support the conclusion that mostly people in the recent and current complaint group display avoidance behaviour, the results from the analysis under the MNAR assumption suggest that it is people with a past complaint who display most avoidance behaviour (supplementary figure 1, supplementary table 4).

The multivariable proportional odds analysis indicated that the odds of more severe hedging are higher for people with a recent or ongoing complaint than for people with a past complaint (OR 1.33 95% CI=1.19, 1.49) (table 6). The odds of hedging slightly increased with the length of time of the investigation (OR 1.01 per month, 95% CI=1.00, 1.01). Hedging was increased when retraining was imposed (OR 1.62, 95% CI=0.84, 3.13) and decreased when the doctor was suspended from practice (OR 0.56, 95% CI=0.26, 1.18). The odds of hedging also decreased when the complaint came from medical colleagues (OR 0.67, 95% CI=0.53, 0.86). There was evidence of an interaction between the type of the most serious complaint one has experienced and whether or not the complaint came from a patient (supplementary figure 1). Hedging was higher when the complaint came from a patient, this was most clear for informal

(OR=3.16, 95% CI=2.17, 4.58) and formal complaints (OR=2.18, 95% CI=1.67, 2.85). When the complaint did not come from a patient, hedging was higher for formal complaints, SUI's and GMC referrals compared to informal complaints (OR=1.52, 95% CI=1.03, 2.24, OR=2.10, 95% CI=1.31, 3.35 and OR=1.78, 95% CI=1.15, 2.71, respectively).

As with hedging, the multivariable analysis indicated that the odds of more severe avoidance increased with the length of time the investigation (OR 1.01 per month, 95% CI=1.01, 1.02), and was higher for people with a recent or current complaint than for people with a past complaint (OR 1.20, 95% CI=1.07, 1.35) (table 7). Avoidance was also increased when the investigation resulted in imposed retraining (OR 1.79, 95% CI=1.0, 3.09). Avoidance behaviour most severely increased when the complaint came from a patient group (OR 1.71, 95% CI=1.02, 2.87) or management (OR 1.59, 95% CI=1.16, 2.16), or when the complaint was anonymous (OR 1.58, 95% CI=1.06, 2.36). The type of complaint did not meaningfully influence the odds of more severe avoidance.

Overall, as a result of their experience of the complaints process, 23% of doctors reported suggesting invasive procedures against their professional judgement, and 14% reported becoming more likely to abandon a procedure at an early stage.

Culture and time off work

20% (95% C.I. 19% to 22%) reported that they felt victimized because they had been a whistleblower for clinical or managerial dysfunction. 38% (95% C.I. 37% to 40%) of people who have had a complaint, recently or in the past, reported feeling bullied during the investigation.

60% (95% C.I. 57% to 64%) spent less than a week off work. However, 27% (95% C.I. 24% to 30%) of people with complaints spent more than a month off work.

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Opinions on changes to improve the system

Of those doctors that gave a response, 85% felt that for managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them mattered quite a lot or a great deal in terms of improving the process. An equal number (85%) felt that if a doctor is exonerated but has suffered financial loss during the process, then they should have the option to make a claim for recovery of lost earnings or costs and in addition that there should be complete transparency of any management communication about the subject of a complaint and that access to such communications should be given to a doctor's representatives. Seventy-four percent of respondents felt that it mattered quite a lot or a great deal that if a complaint from a clinical or managerial colleague was found to be vexatious then this could be investigated and possible disciplinary measures taken. The full details of responses in relation to actions that could be taken to reduce the psychological impact of complaints processes are shown in supplementary table 5.

Discussion

We have shown that doctors who responded to our questionnaire who have recently received a complaint of any kind are 77% more likely to suffer from moderate to severe depression than people who have never had a complaint. They also have double the risk of having thoughts of self-harm, and double the risk of anxiety. Welfare is lowest when the complaint involves referral to the GMC. Doctors with a recent or current complaint also reported that they suffered from an increased likelihood of cardiovascular and gastro-intestinal disorders, depression, anxiety, anger and irritability, suicidal thoughts, sleep difficulty, relationship problems, and frequent headaches than people who had not been through a complaints process. In many cases these problems persisted. We have also shown that 80% of doctors answering the survey reported changing the way they practiced as a result of either complaints against themselves, or after observing a colleague go through a complaints process. The majority (84%) of doctors reported hedging behaviour in response to a complaint (i.e. increased defensive practice) whilst many (46%) admitted avoidance. A further important finding was that many doctors who had a complaint (20%) felt they were victimised after whistle blowing, thirty-nine percent reported that they felt bullied when they were going through the process, and 27% had more than a month off work.

A strength of the study is that to our knowledge it is one of the largest reported on the subject involving 10,930 respondents with 7,926 completing the survey. It is certainly the largest relating to doctors in the UK. We think it is critical that respondents were guaranteed at the outset that their responses were anonymous and untraceable, and so we think the respondents are likely to have been open about their opinions. Furthermore we have obtained quantitative data on the mental wellbeing of doctors using validated questionnaires. It is also important to note that we have collected responses from doctors who have not experienced a complaint but observed the impact on others. On the one hand this gives insight into the impact of observing a colleague going through a complaints process, however it also means that the “no complaints” group may have a higher overall level of psychological morbidity than if doctors could be isolated from complaints processes completely. Hence the relative risks in the paper may be underestimated. A significant limitation of the study is that the response rate was 11.4%, accordingly the findings must be interpreted with

caution due to the possibility of ascertainment bias. What constitutes an acceptable response rate is a subject of debate, however our response rate is clearly low¹⁹. We believe this is inevitable when asking doctors to comment on disciplinary processes and in particular on their regulator. Even if we take the view that the respondents are a selected group, they still demonstrate that a very considerable number of doctors are significantly impacted by complaints processes and practice defensively. It must also be remembered that doctors that have been most traumatised by the complaints process may have felt unable to take part in the survey and a small number are known to have committed suicide. Furthermore those no longer on the register (for example if they have changed profession or erased from the register) are unlikely to be members of the BMA and so would not have been contacted. As some questions involved remembering past events the possibility of recall bias for some answers must also be considered. For a number of questions there were missing responses. However we have considered this issue by using multiple imputation and were reassured that we found no essential differences between the conclusions that would be drawn using complete cases compared to those where missing data have been imputed.

As with any cross-sectional survey we must be careful when considering the findings, as we cannot show causation. It is possible that doctors with depression, anxiety and suicidal ideation are more likely to have complaints made against them, similarly being complained against may be the causative factor rather than the processes themselves. However this still means the information presented is important as if we take the former view, it means those going through complaints processes are a vulnerable group that need support. This was illustrated in a recent study that reported that sick doctors under investigation stated that the processes and communication style employed by the GMC were often distressing, confusing, and perceived to have impacted negatively on their mental health and ability to return to work²⁰.

It is interesting that our findings are similar to a questionnaire-based study of surgeons in the United States examining the emotional toll of malpractice lawsuits. This study found significantly more depression and burnout in surgeons who had recently been exposed to a lawsuit and highlighted the association between burnout and the likelihood of making a medical error⁴.

We found that 10% of doctors responding to the survey who have had a recent complaint have had thoughts of self-harm and are over twice as likely to have had such thoughts compared to doctors who had not personally experienced a complaint. When referral to the GMC is looked at in isolation the number of doctors who reported suicidal ideation reached 15.3%, whilst 26.3% had moderate to severe depression and 22.3% had moderate to severe anxiety on the basis of two validated instruments. Even set against the limitations of the study we have highlighted above, these findings are concerning. In a recent feature article in the BMJ, Dyer reported on the high number of suicides associated with GMC proceedings³. Our results support the view that these proceedings have a disproportionate impact on doctors, especially as the vast majority of doctors who are referred to the GMC are found to have no significant case to answer². However the GMC is at the apex of what amounts to a “complaints pyramid” and our data show similar significant psychological morbidity for doctors across the entire spectrum of complaints procedures.

The incidence of feeling victimized following whistleblowing (20%) and bullying (38%) will be a concern to those trying to build a culture in the UK National Health Service (NHS) where it is safe to speak out about clinical and managerial concerns. The Francis report highlighted the dysfunctional culture that is prevalent in many NHS organisations²¹. Other reports have also highlighted serious concerns about the pressures that may be placed on hospital staff²². Given the large numbers involved, our study supports the view that whistleblowing in the NHS is often not a safe action, that bullying is not uncommon, and that these problems are not isolated events.

The GMC exists to protect patients and the public. This is also the aim of other types of complaints processes with the overall purpose being to learn from mistakes and improve the performance of everyone taking part in patient care. However as with all interventions there may be unforeseen consequences. Previously Jain et al in a qualitative study reported that many general practitioners practice defensively following a complaint⁷. Our data also show the vast majority of doctors who took part in the study reported engaging in defensive practice. This included carrying out more tests than necessary, over-referral, over-prescribing, avoiding procedures, not accepting high-risk patients and abandoning procedures early. Nash and colleagues have also reported high levels of defensive practice²³. In their study which had a

higher response rate of 36%, 43% of doctors reported that they referred more patients, 55% ordered more tests and 11% stated they prescribed more medications than usual in response to medico-legal concerns. In a further report the same authors showed that doctors working in high- intervention areas of medicine are more likely to be the subject of medico-legal complaints²⁴. Defensive practice in such specialties may be particularly concerning.

These behaviors are not in the interest of patients and may cause harm, whilst they may also potentially increase the cost of health care provision. By far the majority of doctors who are reported to the GMC are not found to have a significant case to answer², as is probably the case with other lower level complaint investigations. It therefore does not seem unreasonable to argue that as they currently function, GMC enquiries may do more overall harm than good in terms of patient care. As the “complaints pyramid” is descended it is possible this balance may improve, although we found defensive practice across the entire spectrum of complaints processes.

Whilst we fully acknowledge the limitations associated with any study of this type, we believe our findings have implications for policy makers. Procedures must exist to enable patients to make a complaint about their care, for professionals to raise concerns about standards of practice and for serious untoward events to be investigated. However a system that is associated with high levels of psychological morbidity amongst those going through it is not appropriate as either the subjects of such procedures are vulnerable at the outset or are suffering such morbidity as a direct result of the investigations themselves. Most importantly, a system that leads to so many doctors practicing defensive medicine is not good for patients. A further concern for patient care is the association between doctor’s distress, burnout and decreased empathy with perceived medical errors²⁵.

When asked how the complaints process could be improved doctors indicated that what mattered to them was that the process should be transparent and that staff responsible for investigating complaints should be up to date and competent. There was also a clear feeling that in the event of a complaint being shown to be vexatious then there should be disciplinary consequences if this related to colleagues, or the option for financial redress in the event it related to patients. Concerns about the lack of redress associated with vexatious complaints have been raised in the BMJ before²⁶.

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This highlights the inherent tension in the system whereby an apparent “whistleblower” may be perceived as a vexatious complainant by a colleague.

We have shown that doctors who responded to our questionnaire and experience or observe complaints processes exhibit high levels of psychological morbidity including severe depression and suicidal ideation. These effects are greatest when the process involves the General Medical Council. In addition the majority of these doctors exhibit hedging and avoidance, both these behaviours may be damaging to patient care and be contrary to the professed aims of these processes.

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Contributors

TB conceived of the original idea for the study, interpreted results, drafted the paper and is overall guarantor. MJ designed the questionnaire, obtained ethical approval, contributed to the preparation of the data set, interpreted results and contributed to drafts of the paper. LW and BVC carried out the statistical analysis and contributed to drafts of the papers. MP contributed to the study design, interpretation of results and commented on drafts of the paper. DT and CVA contributed to interpretation of results and commented on drafts of the paper. All authors approved the final version of the manuscript.

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Competing interests

All authors have completed the Unified Competing Interest form and declare: Michael Peters is head of the BMA doctors for doctors unit and so receives payment from the BMA. The BMA had no role in data collection, design of the study, data analysis, interpretation of data, or writing the report and had no influence over whether to submit the manuscript. All other authors stated that they had no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other

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relationships or activities that that could appear to have influenced the submitted work

Ethical approval

Ethical approval was sought and obtained from King’s College London, Psychiatry, Nursing and Midwifery Research Ethics Subcommittee (PNM/12/13-22). All participants consented to participating in the study before they completed the questionnaire. The study was self-funded, and no external funding was sought.

Transparency declaration

The lead author (T Bourne) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no aspects of the study have been omitted in relation to the specific aspects of the study reported in this paper; and that any discrepancies from the study as planned (and, if relevant registered) have been explained.

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Tables and Figures

Table 1: Demographic information relating to both sample 1 and 2 in the study

Age	Total BMA membership consented for research	Sample 1 (n=10113)	Sample 2 (n=7926)
Up to 25	17.8%	1.4%	1.4%
26-29	9.0%	5.1%	5.5%
30-34	9.6%	8.6%	8.8%
35-39	10.3%	11.0%	11.0%
40-44	10.3%	13.5%	13.1%
45-49	10.8%	16.9%	16.8%
50-54	10.3%	18.8%	18.8%
55-59	8.1%	14.6%	14.7%
60-64	5.0%	6.6%	6.4%
65-69	3.0%	2.5%	2.6%
Over 69	5.9%	1.1%	1.0%
Gender	46.3% Female	47.5% Female	47.5% Female
Place of qualification			
United Kingdom	80.1%	80.7%	81.2%
India	8.2%	6.6%	6.2%
Pakistan	2.2%	1.2%	1.2%
Ireland	0.9%	1.4%	1.4%
Nigeria	1.1%	1.2%	1.2%
Germany	0.7%	1.1%	1.2%
South Africa	0.7%	0.8%	0.8%
Other	6.2%	6.9%	6.9%
Ethnicity			
White British	67.6%	77.6%	78.2%
Asian or Asian British	23.3%	16.6%	15.8%
Black or Black British	3.5%	2.3%	2.3%
Chinese or Chinese British	2.9%	1.3%	1.3%
Mixed	2.7%	2.3%	2.3%
Grade:			

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Academics	2.1%	1.2%	1.3%
Consultants	27.2%	37.1%	36.5%
General Practice	26.0%	38.4%	37.8%
Junior Doctors	26.4%	15.7%	16.5%
SASC	5.3%	5.8%	6.11%
Retired	8.6%	0.7%	0.7%
Other or no answer	4.4%	1.0%	1.1%

Table 2. Symptoms severity and relative risk of psychological distress for each complaints group.

	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Depression (PHQ-9)						
Mean (SD) ^a	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
Thoughts of ‘self-harm’ n (%)	83 (4.7%)	221 (5.7%)	218 (9.7%)	522 (6.6%)	1.22 (0.93, 1.61)	2.08 (1.61, 2.68)
Anxiety (GAD-7)						
Mean (SD) ^b	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe anxiety n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 3. Psychological distress within the recent / on-going complaints group by complaint that had the most impact.

	Informal complaint n=362 (16.0%)	Formal Complaint n=1196 (53.0%)	SUI n=280 (12.4%)	GMC referral n=374 (16.6%)	No complaint n=1780 (22.5%)
Depression (PHQ-9)					
Mean (SD) ^a	4.2 (5.0)	4.8 (5.4)	5.1 (5.6)	6.6 (6.7)	3.7 (4.3)
Moderate to severe depression n (%)	45 (12.0%)	190 (15.6%)	46 (16.1%)	100 (26.3%)	169 (9.5%)
Thoughts of 'self-harm' n (%)	24 (6.4%)	110 (9.0%)	27 (9.3%)	58 (15.3%)	83 (4.7%)
Anxiety (GAD-7)					
Mean (SD) ^b	3.8 (4.3)	4.4 (4.7)	4.7 (5.1)	5.7 (5.7)	3.1 (3.8)
Moderate to severe anxiety n (%)	44 (12.0%)	165 (13.5%)	44 (15.3%)	85 (22.3%)	131 (7.3%)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

^b The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Table 4. Psychosomatic health for each of the complaints group. Please note that the past complaints group used retrospective information asking about worsening or onset of symptoms at the time of the complaint, whereas the no and recent complaint groups were asked about the presence of symptoms in the last twelve months.

	No complaint n=1780 (22.5%)	Recent or current complaint n=2257 (28.5%)	Past complaint n=3889 (49.1%)	RR recent or current versus no complaint.
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	124 (7.0%)	280 (12.4%)	405 (10.4%)	1.78 (1.44-2.20)
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	217 (12.2%)	426 (18.9%)	934 (24.0%)	1.55 (1.32-1.82)
Depression	187 (10.5%)	490 (21.7%)	1148 (29.5%)	2.07 (1.74-2.45)
Anxiety	476 (26.7%)	1108 (49.1%)	3045 (78.3%)	1.84 (1.65-2.04)
Anger and irritability	358 (20.1%)	928 (41.1%)	2406 (61.9%)	2.04 (1.77-2.35)
Other mental health problems	12 (0.7%)	54 (2.4%)	256 (6.6%)	3.45 (1.80-6.60)
Suicidal thoughts	44 (2.5%)	211 (9.3%)	519 (13.4%)	3.78 (2.68-5.32)
Sleep problems / insomnia	479 (26.9%)	1137 (50.4%)	288 (74.1%)	1.87 (1.67-2.10)
Relationship problems	187 (10.5%)	458 (20.3%)	911 (23.4%)	1.94 (1.63-2.30)
Frequent headaches	242 (13.6%)	432 (19.2%)	1027 (26.4%)	1.41 (1.19-1.65)
Minor colds	492 (27.6%)	509 (22.5%)	5447 (14.0%)	0.82 (0.73-0.92)
Recurring respiratory infections	77 (4.3%)	143 (6.3%)	306 (7.9%)	1.47 (1.11-1.95)

Table 5 Defensive practice according to complaint group

Because of your/other's experiences with complaints, have you....	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Changed the way of practicing medicine n (%)	1294 (72.7%)	3106 (79.9%)	1912 (84.7%)	6312 (79.6%)	1.10 (1.06,1.14)	1.17 (1.13,1.21)
Displayed hedging behaviour n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
Displayed avoiding behaviour n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
Suggested invasive procedures against professional judgement n (%)	359 (20.2%)	902 (23.2%)	585 (25.9%)	1846 (23.3%)	1.15 (1.02,1.29)	1.29 (1.13,1.46)
Become more likely to abandon a procedure at an early stage n (%)	248 (14.0%)	515 (13.3%)	372 (16.5%)	1136 (14.3%)	0.95 (0.80,1.13)	1.18 (1.00,1.39)
Become less committed and worked strictly to job description n (%)	-	795 (20.5%)	613 (27.2%)		-	-

Table 6. Factors influencing hedging behaviour.

Odds Ratio Estimates for hedging			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.006	1.002	1.011
Recent or current complaint (versus past complaint)	1.331	1.193	1.485
Outcome of investigation			
No fault/ exonerated (yes versus no)	1.051	0.676	1.633
Retraining imposed (yes versus no)	1.622	0.913	2.885
Disciplinary action (yes versus no)	0.815	0.433	1.532
Suspended from practice (yes versus no)	0.557	0.289	1.075
Struck off from the register (yes versus no)	0.583	0.754	1.761
The process was not clearly concluded (yes versus no)	1.152	0.900	1.960
Where did the complaint come from			
Trust (yes versus no)	1.328	0.900	1.960
Medical colleagues (yes versus no)	0.672	0.526	0.860
Management (yes versus no)	0.797	0.581	1.094
Media (yes versus no)	1.084	0.467	2.515
Patient group (yes versus no)	1.495	0.906	2.464
Other health care professional (yes versus no)	1.047	0.798	1.375
Patient (yes versus no)			
For informal complaint	3.155	2.172	4.584
For formal complaint	2.180	1.670	2.846
For SUI	1.212	0.826	1.778
For GMC referral	1.670	1.207	2.311
Anonymous (yes versus no)	1.362	0.922	2.012
Type of complaint			
Formal complaint versus informal complaint			
Complaint did not come from a patient	1.521	1.034	2.239
Complaint came from a patient	1.051	0.903	1.223
SUI versus informal complaint			
Complaint did not come from a patient	2.097	1.311	3.352
Complaint came from a patient	0.805	0.648	1.002
GMC referral versus informal complaint			
Complaint did not come from a patient	1.776	1.164	2.709
Complaint came from a patient	0.940	0.757	1.168

Table 7. Factors influencing avoidance behaviour

Odds Ratio Estimates for avoiding			
Effect	Point Estimate	95% Wald Confidence Limits	
Length of investigation (per month)	1.011	1.006	1.016
Recent or current complaint (versus past complaint)	1.201	1.069	1.350
Outcome of investigation			
No fault/ exonerated (yes versus no)	0.893	0.594	1.340
Retraining imposed (yes versus no)	1.787	1.033	3.092
Disciplinary action (yes versus no)	1.211	0.682	2.152
Suspended from practice (yes versus no)	1.066	0.566	2.008
Struck off from the register (yes versus no)	0.626	0.119	3.305
The process was not clearly concluded (yes versus no)	1.202	0.805	1.796
Where did the complaint come from			
Trust (yes versus no)	1.338	0.910	1.968
Medical colleagues (yes versus no)	1.439	1.134	1.826
Patient (yes versus no)	1.364	1.114	1.670
Management (yes versus no)	1.585	1.163	2.161
Media (yes versus no)	0.866	0.380	1.972
Patient group (yes versus no)	1.708	1.019	2.866
Other health care professional (yes versus no)	1.326	1.015	1.731
Anonymous (yes versus no)	1.580	1.057	2.360
Type of complaint			
GMC referral (versus informal complaint)	1.082	0.885	1.323
SUI (versus informal complaint)	1.112	0.904	1.368
Formal complaint (versus informal complaint)	1.036	0.893	1.203

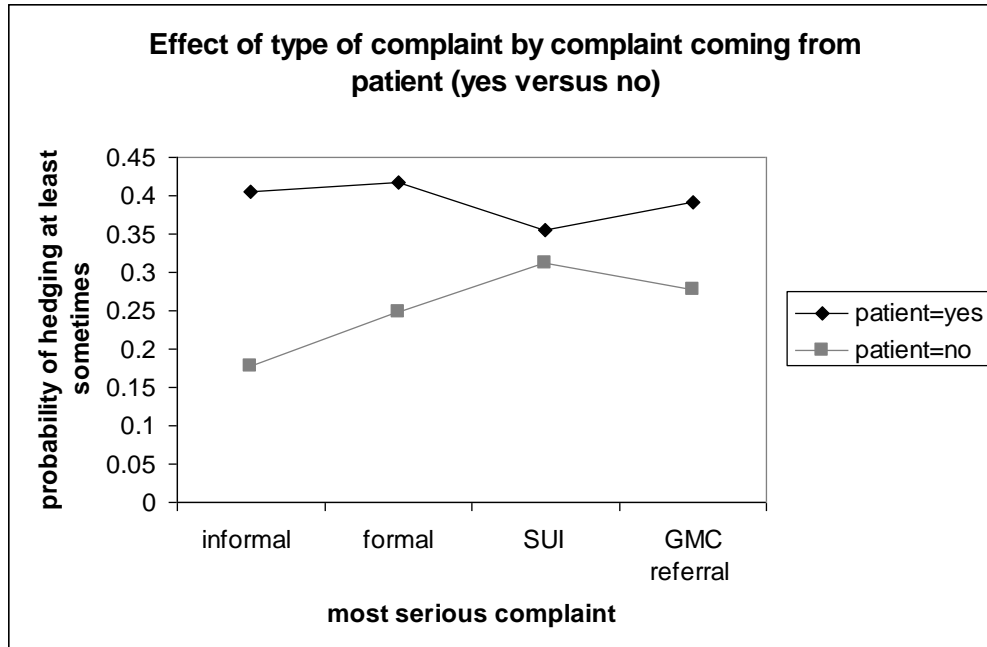
IMPACT study

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Supplementary online material

Supplementary figure 1: Effect of type of complaint on hedging behavior by origin of complaint.



Supplementary material sensitivity analysis and supplementary tables 1-4

Sensitivity Analysis.

As a last step in the analysis, we performed a sensitivity analysis considering also missingness not at random (MNAR) for some of the key analyses. MNAR means that, even accounting for all the available observed information, the reason for observations being missing still depends on the unseen observations themselves. We performed a simple sensitivity analysis, assuming as a not ignorable missing model that depression, anxiety, hedging and avoiding are worse when the value is missing. Therefore, after multiple imputation under the MAR assumption using MICE, I increased each imputed value of depression (PHQ9) and anxiety (GAD7) by a certain number d . This number d was obtained as follows. First, a random number δ was sampled from a normal distribution with mean the estimated standard deviation of the distribution of PHQ9/GAD7, and standard deviation the square root of this value. Then $d = \max(\delta, 1)$, such that d is restricted to imply an increase in PHQ9/GAD7. Therefore, d instead of δ is added to the imputed value under missingness at random (MAR). After this, the new imputed value is rounded and bound at the maximum possible value, such that an integer number on the original scale is obtained. For hedging/avoiding, all missings were assumed to have displayed at least some hedging/avoiding behaviour. The actual score on the scale is irrelevant, because the scale is dichotomised prior to the analysis. After the imputations under MNAR are computed, analysis proceeds as usual, using Rubin's rules to combine results.

Supplementary table 1: Sensitivity analysis for PHQ-9

Depression (PHQ-9)^a	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	255 (14%)	1144 (29%)	214 (9%)	1613 (20%)		
Complete case						
Mean (SD)	3.8 (4.5)	3.4 (4.6)	5.2 (5.8)	4.1 (5.0)	-0.4 (-0.7, 0.1)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	160 (10.5%)	254 (9.3%)	363 (17.8%)	777 (12.3%)	0.88 (0.73, 1.06)	1.69 (1.42, 2.02)
MI MAR						
Mean (SD)	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
MI MNAR						
Mean (SD)	4.3 (4.6)	4.7 (4.8)	5.4 (5.7)	4.8 (5.1)	0.4 (0.1, 0.7)	1.1 (0.8, 1.4)
Moderate to severe depression n (%)	238 (13.4%)	593 (15.2%)	432 (19.2%)	1263 (15.9%)	1.14 (0.95, 1.35)	1.43 (1.21, 1.70)

^a The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

Supplementary table 2: Sensitivity analysis for GAD-7

Anxiety (GAD7) ^b	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent/ current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative risk for past complaint group/ mean difference (95% CI)	Relative risk for recent complaint group / mean difference (95% CI)
Missings	258 (14%)	1148 (30%)	201 (9%)	1607 (20%)		
Complete case						
Mean (SD)	3.2 (3.9)	3.0 (4.0)	4.7 (5.0)	3.6 (4.4)	-0.2 (-0.4, 0.1)	1.5 (1.2, 1.8)
Moderate to severe depression n (%)	123 (8.1%)	194 (7.1%)	330 (16.1%)	647 (10.2%)	0.88 (0.71, 1.09)	1.99 (1.63, 2.42)
MI MAR						
Mean (SD)	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)
MI MNAR						
Mean (SD)	3.7 (4.1)	4.3 (4.4)	4.9 (5.0)	4.3 (4.6)	0.5 (0.2, 0.9)	1.2 (0.9, 1.5)
Moderate to severe depression n (%)	173 (9.7%)	463 (11.9%)	374 (16.6%)	1011 (12.75%)	1.22 (0.98, 1.51)	1.71 (1.35, 2.18)

^bThe GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

Supplementary table 3: Sensitivity analysis for hedging.

Because of your / other's experiences with complaints, have you ever displayed hedging behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	268	1241	273	1782		
Complete case						
n (%)	1222 (80.8%)	2135 (80.6%)	1752 (88.3%)	5109 (83.1%)	1.00 (0.97,1.03)	1.09 (1.06,1.13)
MAR						
n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
MI MNAR						
n (%)	1484 (83.4%)	3369 (86.6%)	2023 (89.6%)	6876 (86.8%)	1.04 (1.01,1.06)	1.08 (1.05,1.10)

Supplementary table 4: Sensitivity analysis for avoidance.

Because of your / other's experiences with complaints, have you ever displayed avoiding behaviour?	No complaint n=1780 (22.5%)	Past complaint n=3889 (49.1%)	Recent or current complaint n=2257 (28.5%)	Total n=7926 (100%)	Relative Risk for past complaint (95% CI)	Relative Risk for recent or current complaint (95% CI)
Missings	242	1222	257	1721		
Complete case						
n (%)	705 (45.8%)	1137 (42.6%)	995 (49.8%)	2837 (45.7%)	0.93 (0.87,1.00)	1.09 (1.01,1.16)
MAR						
n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
MI MNAR						
n (%)	947 (53.2%)	2359 (60.7%)	1252 (55.5%)	4558 (57.5%)	1.14 (1.08,1.20)	1.04 (0.98,1.10)

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Supplementary table 5: How doctors ranked the importance of different actions that might be taken to improve the complaints process might be improved (note these data are not imputed).

	Not at all n (%)	A little n (%)	To some extent n (%)	Quite a lot n (%)	A great deal n (%)	missing n	total n
To allow the doctor to have more direct input into responses to patient complaints	245 (3.9%)	313 (5.0%)	2256 (35.8%)	1524 (24.2%)	1973 (31.3%)	3802	10113
To be given a clear written protocol for any process at the onset	217 (3.4%)	342 (5.4%)	1501 (23.8%)	1846 (29.3%)	2400 (38.1%)	3807	10113
To have strict adherence to a statutory timeframe for any complaint and investigation process	199 (3.2%)	402 (6.4%)	1599 (25.3%)	1732 (27.5%)	2379 (37.7%)	3803	10113
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	261 (4.2%)	440 (7.1%)	1816 (29.2%)	1972 (31.7%)	1733 (27.9%)	3891	10113
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	152 (2.4%)	202 (3.2%)	1202 (19.3%)	1981 (31.8%)	2690 (43.2%)	3886	10113
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	212 (3.4%)	434 (6.9%)	1296 (20.6%)	1528 (24.2%)	2837 (45.0%)	3806	10113
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	131 (2.1%)	260 (4.2%)	1315 (21.1%)	1855 (29.8%)	2668 (42.8%)	3884	10113
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	64 (1.0%)	138 (2.2%)	785 (12.4%)	1872 (29.7%)	3455 (54.7%)	3799	10113
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	59 (1.0%)	102 (2.2%)	757 (12.4%)	1770 (28.3%)	3559 (57.0%)	3866	10113
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	65 (1.0%)	107 (1.7%)	767 (12.3%)	1744 (28.0%)	3551 (57.0%)	3879	10113

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The BMA and defence organisations should be more aggressive and less reactive to complaints in general	186 (3.0%)	447 (7.1%)	1601 (25.5%)	1465 (23.4%)	2575 (41.0%)	3839	10113
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The IMPACT study

1. Consent to participate in the study

This is an electronic form of consent for the study. By ticking the boxes below, you agree to take part in the study.

All information that you provide is ANONYMOUS and CONFIDENTIAL and held in strictest confidence. You will not be asked to provide any information that can be used to identify you nor can you be identified by us by filling in any part of this survey.

1. I consent to the use of my survey results to better understand the impact of complaints and investigations on doctors and their practice.

- ☐ Yes
- ☐ No

2.

3. Demographics

This section will ask you some general questions about you and your background.

2. How old are you?

3. What is your gender?

- ☐ Female
- ☐ Male

4. What is your Marital Status?

5. What is your Ethnic Origin?

6. In which year did you qualify?

7. If you qualified outside the UK, in which year did you come to the UK to practice medicine?

8. If relevant, in which year did you complete your specialist training?

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9. In which country did you complete your medical training?

10. Where is your principal workplace? (where you spend the majority of your working time)

- ☐ GP surgery
- ☐ Elsewhere in primary care
- ☐ District general hospital
- ☐ University teaching hospital
- ☐ Academic institution
- ☐ Private practice clinic/hospital

Other (please specify)

11. What is your specialty?

Other (please specify)

12. Is your current post

- ☐ Part time
- ☐ Part time - Locum
- ☐ Full time
- ☐ Full time - Locum
- ☐ Self-employed contractor

13. What is your grade?

Other (please specify)

14. How long have you worked in your current post?

4. Informal and formal complaints

The IMPACT study

15. Have you ever been subjected to an informal complaint, formal complaint or serious untoward incident?

- ☐ No
- ☐ Yes, and it is either ongoing or was resolved within the past 6 months
- ☐ Yes, and it was resolved more than 6 months ago

5. About your complaint

16. Please enter how many of each of the following you have had

	0	1	2	3	4	5	6	7	8	9	10+
Informal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serious untoward incidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referrals to the GMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. If applicable, which complaint or incident had the most impact on you?

Optional comments

18. What was the reason given to you for your complaint / referral to the GMC (if more than one, please select the most serious allegation)?

- ☐ Clinical complaint
- ☐ Clinical performance (i.e. concerns raised about your practice generally)
- ☐ Personal conduct (e.g. dishonesty, affairs with patients)
- ☐ Criminal offence (e.g. dangerous driving, fraud)

19. Where did the complaint come from?

	Yes	No
Trust	<input type="checkbox"/>	<input type="checkbox"/>
Medical colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Patient	<input type="checkbox"/>	<input type="checkbox"/>
Management	<input type="checkbox"/>	<input type="checkbox"/>
Media	<input type="checkbox"/>	<input type="checkbox"/>
Patient group	<input type="checkbox"/>	<input type="checkbox"/>
Other health care professional	<input type="checkbox"/>	<input type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>

20. How long ago was your (most recent) complaint / investigation concluded?

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21. How long (in months) did the investigation take?

If more than one, please select the most serious allegation

If the investigation is ongoing, please enter the length of time it has taken up to this point

22. If you were referred to the GMC for a procedure, how long did that take (in months)?

If it is still ongoing, please state how long it has taken up to this point

23. How stressful did you find the following aspects of the GMC procedure?

	Extremely stressful	2	Somewhat stressful	4	Not at all stressful	N/A
The initial GMC investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to hold a Fitness to Practice hearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Fitness to Practice hearing itself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. What was the outcome of the complaint / procedure?

- ☐ No fault / exonerated
- ☐ Retraining imposed
- ☐ Disciplinary action
- ☐ Suspended from practice
- ☐ Struck off from the register
- ☐ The process was not clearly concluded

Other (please specify)

25. At any point during the investigation(s), did you

	Yes	No
Take sick leave	<input type="radio"/>	<input type="radio"/>
Take unpaid leave	<input type="radio"/>	<input type="radio"/>
Have supervised practice	<input type="radio"/>	<input type="radio"/>
Have restrictions placed on your practice	<input type="radio"/>	<input type="radio"/>
Were you suspended	<input type="radio"/>	<input type="radio"/>
Did your restrictions also include your private practice (if applicable)	<input type="radio"/>	<input type="radio"/>

26. How long were you off work in total?

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27. Please estimate the direct financial costs (e.g. travel, legal fees, etc. in GBP) to you as a result of the investigation (if relevant)

28. Please estimate the indirect financial costs (e.g. loss of earnings, in GBP) to you as a result of the investigation (if relevant)

29. At any point of the inquiry, did you do any of the following

	Yes	No
Speak to family / friends about it	<input type="radio"/>	<input type="radio"/>
Speak to your colleagues about it	<input type="radio"/>	<input type="radio"/>
Represent yourself	<input type="radio"/>	<input type="radio"/>
Access support from a medical professional support organisation	<input type="radio"/>	<input type="radio"/>
Engage an independent solicitor or barrister	<input type="radio"/>	<input type="radio"/>
Were your case or the complaint published in the media (including social media)	<input type="radio"/>	<input type="radio"/>
Access support from the BMA employment advice service	<input type="radio"/>	<input type="radio"/>
Access support from the BMA counselling / other support organisation	<input type="radio"/>	<input type="radio"/>

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30. As a consequence of the inquiry, to what extent do you agree/disagree with the following statements

	Strongly Agree	2	Neutral	4	Strongly Disagree	N/A
The potential consequences of the enquiry were clear to me throughout the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clearly understood the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The process was transparent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going through the process, I felt that I was assumed guilty until proven otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt as if I had been scapegoated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had no control over what was happening to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt alone in the proceedings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My complaint was primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my medical professional support organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my defence organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that there were unnecessary delays in the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my complaint was handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was worried about the complaint escalating further	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the consequences were proportionate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the nature of the process was overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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31. To what extent did the following apply in relation to the process of the complaint or procedure you experienced

	Not at all	2	To some extent	4	Definitely
Normal process was not followed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The documentary record such as minutes produced by the investigative body was fair and accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time scale for the investigation was needlessly protracted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was kept well informed of when or if I could bring representation to meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe there was inappropriate or vexacious use of the hospital clinical risk process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the complaint arose because of dysfunctional relationships within the clinical team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt victimised because I had been a whistleblower for clinical or managerial failures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical issues were found after the initial complaint and used against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt bullied during the investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt managers used the process to undermine my position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt clinical colleagues used the process to gain an advantage either financially or professionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

32. During the inquiry, to what extent were you worried about the following outcomes

	A lot	2	To some extent	4	Not at all
Loss of livelihood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having aspects of your clinical practice restricted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a marked record in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Currently, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

The IMPACT study

34. To what extent do you agree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. About complaints in general

35. In general, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

The IMPACT study

36. To what extent do you agree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37. To what extent do you agree/disagree with the following statements?

	Strongly Agree	2	Neutral	4	Strongly Disagree
Complaints are primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my management would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my colleagues would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my medical professional support organisation would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had a complaint made against me, I am confident that my defence organisation would support me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that complaints are reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the consequences are proportionate in the complaints process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I believe that the complaints process is overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Medical History

The IMPACT study

38. In the past 12 months, have you suffered from any of the following health conditions or stressors (please tick all that apply)?

- ☐ Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)
- ☐ Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)
- ☐ Depression
- ☐ Anxiety
- ☐ Anger & irritability
- ☐ Other mental health problems
- ☐ Suicidal thoughts
- ☐ Sleep problems / insomnia
- ☐ Marital / relationship problems
- ☐ Frequent headaches
- ☐ Minor colds
- ☐ Recurring respiratory infections

If yes - please specify

39. In the past 12 months, have you experienced any additional life stressors (e.g. bereavement, accident, etc.)

- ☐ Yes
- ☐ No

If yes please specify

40. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

- ☐ Yes, in the past (more than 6 months ago)
- ☐ Yes, currently (in the last 6 months)
- ☐ No

8. Possible legal consequences and professional practice

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

The IMPACT study

41. How often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals than warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters about a patient than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

42. If you have answered "Never" to all the questions above, please omit this question.
Which of the following factors are important?
(please tick all boxes relevant to you)

	Yes	No
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<div></div>	

The IMPACT study

43. As a result of what you know about the complaints process, have you

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that are considered high risk of complaints	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Become less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
Become more likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Felt that you have learnt from others' experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>

Other (please specify)

44. Indicate the extent you feel that any of the following changes would improve the complaints process?

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Medical History (ii)

The IMPACT study

45. In the past 12 months, have you suffered from any of the following health conditions or stressors (please tick all that applies):

- ☐ Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)
- ☐ Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)
- ☐ Depression
- ☐ Anxiety
- ☐ Anger & irritability
- ☐ Other mental health problems
- ☐ Suicidal thoughts
- ☐ Sleep problems / insomnia
- ☐ Marital / relationship problems
- ☐ Frequent headaches
- ☐ Minor colds
- ☐ Recurring respiratory infections

If yes - please specify

46. In the past 12 months, have you experienced any additional life stressors (e.g. bereavement, accident, etc.)

- ☐ Yes
- ☐ No

If yes, please specify

47. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

- ☐ Yes, in the past (more than 6 months ago)
- ☐ Yes, currently (in the last 6 months)
- ☐ No

10. Legal consequences and professional practice (ii)

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

The IMPACT study

48. How often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals even when this is not warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

49. If you have answered "Never" to all the questions above, please omit this question.
Which of the following factors are important?
(please tick all boxes relevant to you)

	Yes	No
Previous experience of complaints about you	<input type="radio"/>	<input type="radio"/>
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)		

The IMPACT study

50. As a result of your experience do any of the following apply?

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that led to the complaint	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
More likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Moved into a non-clinical role	<input type="radio"/>	<input type="radio"/>
You have become less committed and work strictly to your job description	<input type="radio"/>	<input type="radio"/>
You have learnt from the experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>
Left medicine and started a new career	<input type="radio"/>	<input type="radio"/>
The complaint or the way you were treated was related to discrimination	<input type="radio"/>	<input type="radio"/>
Retired early	<input type="radio"/>	<input type="radio"/>
Reduced your hours in the NHS to minimise your time there	<input type="radio"/>	<input type="radio"/>
Stopped working for the NHS and decided to work only in private practice or practice medicine elsewhere	<input type="radio"/>	<input type="radio"/>

Other (please specify)

51. Indicate the extent you feel that any of the following changes would improve the process

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and with possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. About your complaint (iii)

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52. Please enter how many of each of the following you have had

	0	1	2	3	4	5	6	7	8	9	10+
Informal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formal complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serious untoward incidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referrals to the GMC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

53. If applicable, which complaint or incident had the most impact on you?

Optional comments

54. What was the reason for your complaint / referral to the GMC (if more than one, please select the most serious allegation)?

- ☐ Clinical complaint
- ☐ Clinical performance (i.e. concerns raised about your practice generally)
- ☐ Personal conduct (e.g. dishonesty, affairs with patients)
- ☐ Criminal offence (e.g. dangerous driving, fraud)

55. Where did the complaint come from?

	Yes	No
Trust	<input type="checkbox"/>	<input type="checkbox"/>
Medical colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Patient	<input type="checkbox"/>	<input type="checkbox"/>
Management	<input type="checkbox"/>	<input type="checkbox"/>
Media	<input type="checkbox"/>	<input type="checkbox"/>
Patient group	<input type="checkbox"/>	<input type="checkbox"/>
Other health care professional	<input type="checkbox"/>	<input type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>

56. How long ago was your (most recent) complaint / investigation concluded?

57. How long (in months) did the investigation take (if more than one, please select the most serious allegation)?

58. If you were referred to the GMC for a process, how long did that take (in months)?

The IMPACT study

59. If applicable, how stressful did you find the following aspects of the GMC process?

	Extremely stressful	2	Somewhat stressful	4	Not at all stressful	N/A
The initial GMC investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to hold a Fitness to Practice hearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Fitness to Practice hearing itself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

60. What was the outcome of the complaint / process?

- ☐ No fault / exonerated
- ☐ Retraining imposed
- ☐ Disciplinary action
- ☐ Suspended from practice
- ☐ Struck off from the register
- ☐ The process was not clearly concluded

Other (please specify)

61. At any point during the investigation(s), did you

	Yes	No
Take sick leave	<input type="radio"/>	<input type="radio"/>
Take unpaid leave	<input type="radio"/>	<input type="radio"/>
Have supervised practice	<input type="radio"/>	<input type="radio"/>
Have restrictions placed on your practice	<input type="radio"/>	<input type="radio"/>
Were you suspended	<input type="radio"/>	<input type="radio"/>
Did your restrictions also include your private practice (if applicable)	<input type="radio"/>	<input type="radio"/>

62. How long were you off work in total?

63. Please estimate the direct financial costs (e.g. travel, legal fees, etc. in GBP) to you as a result of the investigation (if relevant)

64. Please estimate the indirect financial costs (e.g. loss of earnings in GBP) to you as a result of the investigation (if relevant)

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65. At any point of the inquiry, did you

	Yes	No
Speak to family / friends about it	<input type="radio"/>	<input type="radio"/>
Speak to your colleagues about it	<input type="radio"/>	<input type="radio"/>
Represent yourself	<input type="radio"/>	<input type="radio"/>
Access support from a medical professional support organisation	<input type="radio"/>	<input type="radio"/>
Engage an independent solicitor or barrister	<input type="radio"/>	<input type="radio"/>
Were your case or the complaint published in the media (including social media)	<input type="radio"/>	<input type="radio"/>
Access support from the BMA employment advice service	<input type="radio"/>	<input type="radio"/>
Access support from the BMA counselling / other support organisation	<input type="radio"/>	<input type="radio"/>

66. As a consequence of the inquiry, to what extent do you agree/disagree with the following statements?

	Strongly agree	2	Neutral	4	Strongly disagree	N/A
The potential consequences of the enquiry were clear to me throughout the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clearly understood the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The process was transparent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going through the process, I felt that I was assumed guilty until proven otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt as if I had been scapegoated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I had no control over what was happening to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt alone in the proceedings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My complaint was primarily related to conflicts with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my medical professional support organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt well supported by my defence organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was reasonably dealt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that there were unnecessary delays in the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my complaint was handled competently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was worried about the complaint escalating further	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the consequences were proportionate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the nature of the process was overly punitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the complaint was vexatious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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67. To what extent did the following apply in relation to the process of the complaint or procedure you experienced?

	Not at all	2	To some extent	4	Definitely
Normal process was not followed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The documentary record such as minutes produced by the investigative body was fair and accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time scale for the investigation was needlessly protracted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was kept well informed of when or if I could bring representation to meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe there was inappropriate or vexacious use of the hospital clinical risk process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the complaint arose because of dysfunctional relationships within the clinical team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt victimised because I had been a whistleblower for clinical or managerial failures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical issues were found after the initial complaint and used against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt bullied during the investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt managers used the process to undermine my position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt clinical colleagues used the process to gain an advantage either financially or professionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

68. During the inquiry, to what extent were you worried about the following outcomes?

	A lot	2	To some extent	4	Not at all
Loss of livelihood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional humiliation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having aspects of your clinical practice restricted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a marked record in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

69. Currently, to what extent do you worry about complaints being made against you?

- ☐ A great deal / nearly all the time
- ☐ 2
- ☐ To some extent
- ☐ 4
- ☐ Not at all

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70. To what extent do you agree with the following statements?

	Definitely agree	2	Neutral	4	Definitely disagree
Complaints are usually due to bad luck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A doctor who receives more complaints than other colleagues usually does so because of poor clinical performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaints are caused by litigious patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors are hounded by the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctors who receive complaints against them are generally unsuitable to practice medicine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to please my colleagues to avoid complaints against me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a complaint is a good way of getting rid of colleagues that are "inconvenient"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a complaint would seriously affect my future career prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have considered changing my career because of the high risk of receiving a complaint in my speciality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Medical History (iii)

71. When you were facing the investigation, did you experience any of the following?

	Improvement	No change	Onset of	Worsening of
Cardio-vascular problems (e.g. high blood pressure, angina, heart attack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gastro-intestinal problems (e.g. gastritis, IBS, ulcers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anger & irritability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other mental health problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suicidal thoughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep problems / insomnia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relationship problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequent headaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minor colds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recurring respiratory infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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72. During the process, did you experience any additional life stressors (e.g. bereavement, accident, etc.)

- ☐ Yes
- ☐ No

If yes please specify

73. Have you ever been aware of, or other people raised concerns, that you are drinking too much alcohol or taking (prescribed or non-prescribed) drugs?

- ☐ Yes, in the past (more than 6 months ago)
- ☐ Yes, currently (in the last 6 months)
- ☐ Yes, during the investigation
- ☐ No

13. Legal consequences and professional practice (iii)

Within the LAST 6 MONTHS, have you ever taken the following actions which you would not have done if you were not worried about possible consequences such as complaints, disciplinary actions by managers, being sued, or publicity in the media?

74. As a result of your experience, how often have you done any of the following?

	Never	2	Sometimes	4	Often
Did you change the way you practice medicine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed more medications than medically indicated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested invasive procedures against professional judgement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to specialists in unnecessary circumstances?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducted more investigations or made more referrals than warranted by the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admitted patients to hospital when the patient could have been discharged home safely or managed as an outpatient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asked for more frequent observations to be carried out on a patient than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written in patients' records specific remarks such as "not suicidal" which you would not if you were not worried about legal/media/disciplinary consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written more letters about a patient than is necessary to communicate about the patient's condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred patient for a second opinion more than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carried out more tests than necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not accepted "high risk" patients in order to avoid possible complications?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid a particular type of invasive procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stopped doing aspects of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you are a worse practitioner because of the above actions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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75. If you have answered "Never" to all the questions above, please omit this question.
Which of the following factors are important?
(please tick all boxes relevant to you)

	Yes	No
Previous experience of complaints about you	<input type="radio"/>	<input type="radio"/>
Your colleagues' previous experience of complaints	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving you	<input type="radio"/>	<input type="radio"/>
Previous legal claims involving your colleagues	<input type="radio"/>	<input type="radio"/>
Previous critical incident	<input type="radio"/>	<input type="radio"/>
Concerns about media interest	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>	

76. As a result of your experience do any of the following apply?

	Yes	No
Stayed in the specialty but stopped carrying out the area of work that led to the complaint	<input type="radio"/>	<input type="radio"/>
Changed your specialty	<input type="radio"/>	<input type="radio"/>
Less likely to take on high-risk cases	<input type="radio"/>	<input type="radio"/>
More likely to abandon a procedure at an early stage	<input type="radio"/>	<input type="radio"/>
Moved into a non-clinical role	<input type="radio"/>	<input type="radio"/>
You have become less committed and work strictly to your job description	<input type="radio"/>	<input type="radio"/>
You have learnt from the experience and improved your performance as a doctor	<input type="radio"/>	<input type="radio"/>
Left medicine and started a new career	<input type="radio"/>	<input type="radio"/>
The complaint or the way you were treated was related to discrimination	<input type="radio"/>	<input type="radio"/>
Retired early	<input type="radio"/>	<input type="radio"/>
Reduced your hours in the NHS to minimise your time there	<input type="radio"/>	<input type="radio"/>
Stopped working for the NHS and decided to work only in private practice or practice medicine elsewhere	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>	

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77. Indicate the extent you feel that any of the following changes would improve the process

	Not at all	2	To some extent	4	A great deal
To allow the doctor to have more direct input into responses to patient complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be given a clear written protocol for any process at the onset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have strict adherence to a statutory timeframe for any complaint and investigation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and with possible disciplinary measures taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The BMA and defence organisations should be more aggressive and less reactive to complaints in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. PHQ-9 & GAD-7

78. Over the last 2 WEEKS, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling down, depressed, or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble falling or staying asleep, or sleeping too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling tired or having little energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor appetite or overeating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling bad about yourself — or that you are a failure or have let yourself or your family down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble concentrating on things, such as reading the newspaper or watching television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thoughts that you would be better off dead or of hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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79. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- ☐ Not difficult at all
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ Extremely difficult

80. Over the last 2 WEEKS, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being able to stop or control worrying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worrying too much about different things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trouble relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being so restless that it is hard to sit still	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming easily annoyed or irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling afraid as if something awful might happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. LDI

This scale is intended to estimate your current level of satisfaction with each of the eighteen areas of your life listed below. Please circle one of the numbers (1-7) beside each area. Numbers toward the left end of the seven-unit scale indicate higher levels of dissatisfaction, while numbers toward the right end of the scale indicate higher levels of satisfaction. Try to concentrate on how you currently feel about each area.

81. Please estimate your current level of satisfaction with each of the following areas of your life.

	1 Extremely dissatisfied	2	3	4	5	6 Extremely satisfied
Marriage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship to spouse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship to children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation/Leisure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfaction with life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expectations for future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Additional information (optional)

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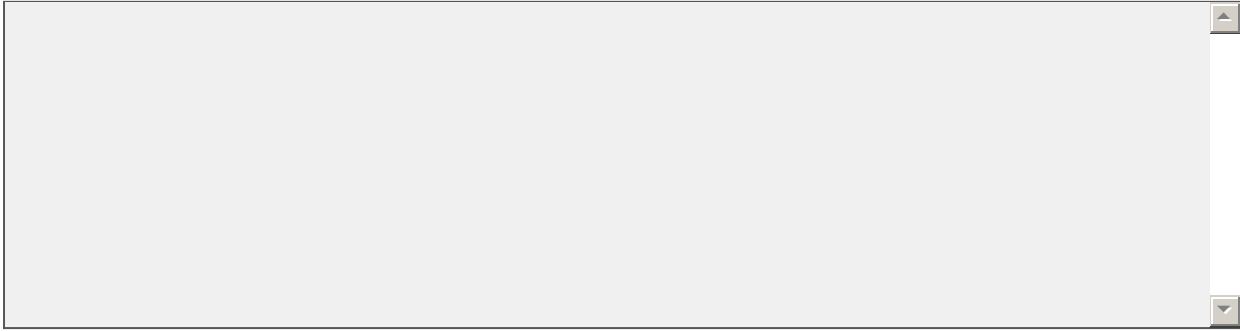
82. (If relevant) Try to summarise as best you can your experience of the complaints process and how it made you feel

83. (if relevant) What were the most stressful aspects of the complaint?

84. What would you improve in the complaints system?

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85. Other comments



17. Thank you for taking part in this study

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study’s design with a commonly used term in the title or the abstract	Contained in the title
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8-11
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	8-11
Bias	9	Describe any efforts to address potential sources of bias	COMPARISON OF SAMPLE WITH SAMPLING FRAME: p 8 MISSINGNESS (AT RANDOM/NOT AT RANDOM): p 13
Study size	10	Explain how the study size was arrived at	7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	10-12, 13

Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	11-13
		(b) Describe any methods used to examine subgroups and interactions	12
		(c) Explain how missing data were addressed	12-13
		(d) If applicable, describe analytical methods taking account of sampling strategy	N A
		(e) Describe any sensitivity analyses	13
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	7
		(c) Consider use of a flow diagram	/
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Table 1
		(b) Indicate number of participants with missing data for each variable of interest	12; Supplementary material sensitivity analysis and supplementary tables 1-4
Outcome data	15*	Report numbers of outcome events or summary measures	Table 2 and 3
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	13-14, 15-16
		(b) Report category boundaries when continuous variables were categorized	10, 11
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	/
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	14, Supplementary material sensitivity analysis and supplementary tables 1-4
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and	18-19-

		magnitude of any potential bias	
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	19-20
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	7/24

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.