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The practice of defensive medicine among hospital doctors in the United Kingdom

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Abstract

Background: The practice of defensive medicine in the United Kingdom has not been well explored in the British medical literature. The objective of this study was to assess the prevalence of the practice of defensive medicine in the UK among hospital doctors and factors affecting it.

Methods: A survey was designed, with a detailed seventeen point questionnaire. Defensive medicine practice was assessed and tested against four factors age, gender, specialty and
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grade. The setting was in three UK hospitals (two in South Wales, one in Kent). Two hundred and four hospital doctors participated in this study.

Results: Two hundred and four (68%) out of 300 hospital doctors responded to the survey. Seventy eight percent reported practicing one form or another of defensive medicine. Ordering unnecessary tests is the commonest form of defensive medicine reported by 59% of the respondents. This is followed by unnecessary referral to other specialties (55%). While only 9% of the sampled doctors would refuse to treat high risk patients, double this number would avoid high risks procedures all together (21%). A backward logistic regression module has shown that only senior grade was associated with less practice of defensive medicine.

Conclusion: Defensive medical practice is common among the doctors who responded to the survey. Senior grade is associated with less defensive medicine practice.

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Background

Defensive medicine is defined as a doctors’ deviation from their usual behavior or that considered good practice, to reduce or prevent complaints or criticism by patients or their families [1]. The United States Congress expand this definition to include the action of ordering
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tests, procedures and visits, or avoidance of high risk patients or procedures with the primary (but not sole) aim, of reducing malpractice liability [2]. A more narrow approach was adopted in Summerton’s 2000 study on defensive medical practices in General Practice; “the ordering of treatments, tests, and procedures for the purpose of protecting the doctor from criticism rather than diagnosing or treating the patient” [3].

For those unfortunate enough to have received a complaint or experienced litigation, the response is often deeply personal, with the affected doctor feeling anger, guilt, shame and loss of confidence, with some considering leaving the profession [4]. Although the effect of perceived litigation threat on doctors’ behavior itself is interesting, the key question to consider is whether such an effect produces a positive or negative outcome for the patient. Where doctors order diagnostic tests in the absence of indicators suggesting that these are in the patient’s best interests, patients may be exposed to risk of injury from the unnecessary and often invasive procedures, which may be greater than that of missing an unlikely diagnosis [5, 6].

In the United Kingdom (UK), studies attempting to ascertain the prevalence of defensive practices have been extremely limited. Summerton helped shed some light on the issue in the context of General Practice in 2000 [3, 7]. This observational study compared the prevalence of negative defensive medical practices in 1999 to those by the same doctors in 1994, and concluded that GPs were significantly more likely to undertake diagnostic testing, refer patients and avoid treating certain conditions at the later date. This is despite the fact that GPs are less likely to be subjected to a court action for negligence than their hospital colleagues [3].
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The objectives of this study were to assess the prevalence of the practice of defensive medicine among hospital doctors in the UK and the factors affecting it. We hypothesized that age, gender, specialty and grade affect the practice of defensive medicine.

Methods

A survey was designed, with a detailed seventeen point questionnaire. Ethical approval was obtained from Research and Development Office of Cardiff and Vale University Local Health Board. The questionnaire was initially drafted and subsequently modified following advice obtained during piloting. Ten doctors of three grades were interviewed for piloting; four questions were modified following the initial piloting phase. Three hospitals were chosen from two deaneries, two in South Wales and one in Kent. The hospitals were chosen on the basis of convenience sampling. All the three hospitals are NHS, none is private. The study was conducted from April 2010 to March 2011. Lists of doctors employed by the hospitals and working in all specialties were obtained from the medical staffing departments, doctors were emailed to complete the electronic version, and those who did not respond to the emailed based survey were approached and interviewed, the interviews were carried out by three trained doctors. Three hundred doctors were approached in the three selected hospitals. Efforts were made to ensure doctors in different departments and of differing grades were asked to participate with continuous and ongoing monitoring of responses. The questionnaire sought demographic information about age, gender, specialty and grade. We also enquired about awareness and personal use of different aspects of defensive medical practice.
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For the purpose of this study, doctors who are practicing ANY of the following are considered practicing defensive medicine: ordering tests that are probably not clinically indicated to avoid litigation, carrying out interventions or procedures that are probably unnecessary to avoid litigation, arranging unnecessary referrals to other specialties to avoid litigation, prescribing medications to prevent later criticism or litigation, refusing to treat high risk patients to avoid the possibility of litigation stemming from complications, or avoiding high risk procedures to avoid the possibility of litigation stemming from complications.

Four factors were tested in relation to the practice of defensive medicine age, gender, specialty and grade. Doctors were divided into four age groups, 20 – 30, 31- 40, 41 -50 and more than 50 years. Specialties were categorized as Medicine, Surgery, Obstetrics and Gynecology, Pediatrics and Other specialties. The doctors’ grades were divided into three grades: juniors, middle grades and seniors. Junior grades include doctors in foundation year one and two, core trainees, and the previous senior house officer grade. Middle grade included staff grades, specialty doctors and associate specialists. Senior grade include only consultants.

Univariate analysis was done using Fisher’s Exact test to compare doctors who practice defensive medicine and those who do not. Significant factors were then entered into a backward stepwise likelihood ratio logistic regression. A p value of ≤ 0.05 was considered significant. Data were analyzed with PASW Statistics 18, SPSS Inc, USA.

The required sample size was calculated to determine the prevalence of defensive medicine with an estimated prevalence of 90% with 5% bound of error and 95% level of confidence. On this basis, the necessary sample size was 139 doctors. Sample size was also calculated for
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consideration of associated factors and since no previous estimates were available for factors, we kept estimated prevalence for factors as 50% to achieve the OR of 1.5. With this calculation, the required sample size was 130 doctors. Hence 139 were kept as the final optimal sample size. As the questionnaire was electronic or an anonymous paper version, we inflated our sample size 40% to adjust for non-responders resulting in final sample size of around 200 doctors, as this was voluntary emailed based survey we approached 300 doctors to account for non-respondents.

Results

Overall 204 doctors responded to our questionnaire, making the response rate 68%. Table 1 shows the characteristics of the participants, 67% were 40 years old or younger. Males made up 57% of the participants. Surgeons were the least represented specialty (12%). Consultants account for 47% of the respondents.

The majority of participants, 89% (n = 182) were aware of the concept of defensive medical practice. Only 14% (n = 29) believed that they are working in a blame free culture while 86% (n = 175) believed the opposite. The majority 91% (n = 185) had the impression that legal claims against doctors are increasing and 14% (n = 29) had a direct experience of litigation. The majority of doctors had some form of indemnity cover, 90% (n = 184) [Table 2].

Seventy eight percent (n = 159) of the surveyed hospital doctors reported practicing one or another form of defensive medicine. Those who are more than 40 years old and those who are in consultant jobs reported practicing significantly less defensive medicine than others (P – value 0.001 and < 0.0001 respectively) [Table 3]. However, when we carried out backward
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logistic regression analysis, only grade was found to affect the practice of defensive medicine significantly (odd ratio 0.44) [Table 4].

Ordering un-necessary tests was the most common form of defensive medicine practiced by the sampled hospital doctors (59%) followed by arranging un-necessary referral to other specialties (55%). Nine percent would refuse to treat high risk patients. However, over double this number (21%) would avoid high risks procedures all together [Table 5].

Discussion

We achieved 68% response rate, we think the factors that improved the response rate were the fact that most of respondents found the survey subject interesting and very close to their hearts, they felt that the wellbeing of doctors is often an ignored part of the care system.

Secondly as we expected weak response to the electronic version, we monitored the responses on regular bases and those who did not respond to the email survey were identified and contacted in person for face to face interview.

Most of the sampled hospital doctors were aware of the defensive medicine concept and practice (98%). The National Health Service (NHS) in the UK has been working hard for many years to create a blame free culture however our results highlighted that this far from being reality, with 86% of the doctors in this study believing they are not working in such culture. This might be due to fear of litigation among all doctors. The majority of respondents (90%) reported that they have indemnity cover though from January 1990 health authorities took over financial responsibility for negligence attributable to medical and dental staff of the hospital and community health services, as a result, it should no longer be a contractual
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requirement for NHS employed doctors to hold indemnity insurance for work undertaken as part of their employment contract. However separate indemnity through the defense societies or other insurer must be taken out by the doctor for any work which is not covered by the indemnity scheme. Fourteen percent of the respondents had a direct experience of litigation and one in three consultants in this study had a direct experience with litigation.

More than three quarters (78%) of doctors reported practicing one form or another of defensive medicine, and although this seems to be a high prevalence rate, in fact this is well below the prevalence of defensive medicine reported in United states of America (USA) and Japan where the prevalence of defensive medicine practice is reported to be above 90% [8, 9, 10].

The practice of defensive medicine was found to be statistically significantly less in those above the age of 40 years and those on more senior posts. However when we carried out backward logistic regression analysis, only senior grade (consultant) was found to be associated with less defensive medicine practice, in fact the practice of defensive medicine in this study tends to double as you go down from consultant grade through middle grade to junior grade (odd ratio 0.44). This suggest age alone is probably is not the best indicator of competency or experience. However consultants do seem more confident in their skills and appear to be practicing less defensive medicine.

Whilst many other studies have suggested that the risk of litigation is related to a large extent to the specialty [11], our study did not show any significant different in the practice of defensive medicine among different specialties (P–value = 0.32), however given the small
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sample size this is might not be a true reflection. We also found no correlation between gender and the practice of defensive medicine.

Over half of the sampled doctors in this study (59%) practice defensive medicine in the form of ordering un-necessary tests. Interestingly this is exactly the same percentage that Nicholas Summerton found in 1995 among general practitioners in the UK where 59% said they would request diagnostic tests to avoid complaints and litigation [7]. Imaging studies were shown in some other studies to be the most common test ordered defensively and in some specialties like orthopedic surgery expensive imaging modalities such as Magnetic Resonance Imaging (MRI) represented 48.7% of the tests ordered defensively [12]. In another survey, Massachusetts physicians stated that between 20% and 30% of plain film x-rays, CT scans, MRI studies and ultrasound studies were ordered primarily for defensive purposes [13].

Unnecessary referral to other specialties is also very common. In this study 55% of the sampled doctors stated that they practice this form of defensive behaviour. This is slightly less than the prevalence found by Nicholas Summerton in 1995 where 65% of GPs said that they arranged unnecessary referrals to avoid litigation [8]. In our study 27% of doctors said that they will perform unnecessary interventions or procedures to avoid the risk of litigation. Prescribing medications to avoid the risk of litigation is also not uncommon practice among the studied hospital doctors (23%). Summerton in 1995 [8] found that 29% of GPs reported prescribing unnecessary medications to avoid the risk of litigation, whilst on his follow up study in 2000 this dropped to 21% [3], which is a similar figure to that found in this study. This form of practice
The practice of defensive medicine can cause significant harm to patients; moreover this can cost a lot of money and increase significantly the health care bill.

While only 9% of the sampled hospital doctors would refuse to treat high risk patients, over double this number would avoid high risks procedures all together (21%). This is not surprising as other studies in the USA showed that up to 42% doctors working in high risk specialties like orthopedics reported that they had taken steps to restrict their practice in the previous years, including eliminating procedures prone to complications, such as trauma surgery, and avoiding patients who had complex medical problems or were perceived as litigious [8].

The cost of defensive medical practice is difficult to estimate due to the many conflicting and overlapping factors. While there have been attempts to estimate the cost of litigation and malpractice on the total health budget [14], only a few studies assessed the cost of defensive medical practice on heath system budget specifically. It is expected that the cost of defensive medicine is huge, in the USA it is estimated that the national cost of defensive medicine for the specialty of orthopedic surgery is $2 billion annually [15]. As 78% of the sampled doctors reported practicing one or other forms of defensive medicine we suspect from this study that the cost of defensive medical practice among hospital doctors in NHS will be very high and might be one of the major causes of the NHS budget deficits over the last decade despite the progressive increase in budget. Given the small size of this study further cost analysis studies is urgently needed to establish the overall cost of the practice of defensive medicine on the NHS budget.
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The main limitations affecting our study are the small sample size and the fact that it was carried out in only three hospitals. Secondly email responses were mixed with in-person responses, creating different response methods. Additionally our sample size was calculated on assumption of higher prevalence than what was found in this study. However given the scare data about the practice of the defensive medicine in the British health system we think this study is going to shed some light on an ignored area of medical practice in the UK.

Conclusion:

Defensive medicine practice is common among hospital doctors who responded to our survey. Ordering un-necessary tests is the commonest form of the defensive medicine identified in this study. Senior grade is significantly associated with less practice of defensive medicine.

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Conflict of interest

We certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

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1- Osman Ortashi: Conception and design, analysis and interpretation.

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3- Rudaina Hassan: Acquisition of data, analysis and interpretation of data. Drafting the manuscript.

4- Tomasz Mutrynowski: Acquisition of data, analysis and interpretation of data.

5- Fikri Abu-Zidan: Revising the manuscript critically for important intellectual content. Final approval of the version to be published
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References


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Additional files provided with this submission:

Additional file 1: tables EJMR.doc, 57K
http://www.biomedcentral.com/imedia/9360485992269161/supp1.doc