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## PROFESSIONAL EDUCATION & TRAINING | RESEARCH ARTICLE

# Education trajectories and malpractice complaints—A study among Danish general practitioners

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**Abstract:** Malpractice litigation is an increasing concern in general practice and other healthcare services but possibly is susceptible to changes in education schemes. In this study using Danish register data, we aimed to investigate the association between general practitioners' risk of becoming involved in a malpractice complaint in a 1-year time frame and their educational trajectory. Greater age at graduation was associated with increased odds of later complaints, but decreased odds of complaints leading to critique by a disciplinary board. In addition, the time following specialisation, in particular, was associated with increased odds of complaints. Complaint occurrence appeared unrelated to place of education. These findings suggest that, from the point of view of complaints, attention may reasonably be drawn to the significance of medical education and continuing professional development.

**Subjects:** Health and Social Care; Health Law and Ethics; Health Communication; Health Education and Promotion

**Keywords:** education; primary care; general practice; malpractice; complaints

### 1. Introduction

Patient complaints are a substantial challenge to healthcare providers, and in general practice, in particular, ongoing patient–doctor relationships are at risk of being severely damaged (Birkeland,

### ABOUT THE AUTHOR

Søren Birkeland is a registered GP and an associate professor at the Department of Regional Health Research at University of Southern Denmark and Centre for Quality doing teaching and research in public health law, professional ethics, and patient safety. Centre for Quality is a leading research centre in Region of Southern Denmark with expertise in patient safety and healthcare quality improvement. Søren Birkeland and Søren Bie Bogh together investigate malpractice litigation patterns in the healthcare system. The present paper aims to shed light on education factors influencing malpractice litigation occurrence.

### PUBLIC INTEREST STATEMENT

Malpractice complaints are a major concern in general practice but possibly could be reduced through education. Using Danish register data, we studied the association between general practitioners' risk of becoming involved in malpractice complaints and their educational trajectory. Greater age at graduation from medical school was associated with higher occurrence of later complaints, but decreased occurrence of complaints leading to critique by a disciplinary board. In particular, the time following completed specialist training was associated with more complaints. No association could be established between place of education and complaint figures. Further research is warranted considering educational elements preventing malpractice litigation including, e.g., the effect of various approaches to communication training.

Depont Christensen, Damsbo, & Kragstrup, 2013). Former research suggests that complaints occur more frequently with increased workload, male gender, greater age and increased general practitioner (GP) seniority (Birkeland, Christensen, Damsbo, & Kragstrup, 2013; Kohatsu, Gould, Ross, & Fox, 2004; Morrison & Wickersham, 1998; Nash et al., 2009). There is, however, a lack of knowledge about how to prevent complaints and counteract factors such as the apparent influence of age. It is plausible that education affects health professional performance in a way that also influences the risk of patient complaints. For example, as post-graduate education repeatedly has been suggested as a means to optimise the standard of care (Gunn, 1999), it is tempting to hypothesise that increased post-graduate education will reduce malpractice litigation occurrence. Likewise, as previous research findings suggested, factors such as medical school curricula may be of importance (Waters, Lefevre, & Budetti, 2003). In this study, using Danish complaint register data, we aimed to investigate the association between GPs' risk of becoming involved in a malpractice lawsuit and their educational background.

## 2. Materials and methods

### 2.1. Setting

The Danish National Health Service provides access to tax-financed health care including GP care for all residents (Birkeland et al., 2013). Dissatisfied patients may file a written complaint, which, as is the case in many other countries, is handled by a disciplinary board that can impose sanctions in the form of a written "critique" (Birkeland et al., 2013; Morrison & Wickersham, 1998).

In Denmark, medical school entails 6 years of university studies. Currently, authorisation as a GP specialist requires at least 6 years of mandatory post-graduate training, including 3 years in general practice while receiving supervision and attending a fixed course programme. After obtaining GP specialist authorisation, there are no requirements for further education or recertification, although funds are allocated to encourage GPs to participate in courses such as those provided by Danish authorities.

### 2.2. Methods

To analyse educational factors associated with patient complaints, odds ratios (ORs) were estimated using a multiple logistic regression model with adjustment for mixed effects. The dependent variable distinguished GPs who had received a complaint and the independent variables included the following characteristics: age at graduation, place of education (medical school), duration of post-graduate education to obtain specialist recognition and duration of clinical work since completing specialist education.

Register information about all complaint cases concerning GPs completed during 1 year (2007) was obtained, together with information about GP characteristics, from the Danish National Board of Health registries (Birkeland et al., 2013). Further, medical school information was obtained through a manual search, mainly of Danish Medical Association yearbook information. Similarly, information was recorded for a randomly selected control group of GPs having no complaint cases. All analyses were performed using Stata®, version 15 (StataCorp, College Station, TX, USA).

## 3. Results

In total, 285 complaints were made against 3699 GPs. In 19.3% of cases, the GP had undergone critique ( $n = 55$ ). Mean age at graduation was 26.2 years, and GPs had an average of 11.0 years of clinical experience after completing formal post-graduate education. The results from the logistic regression analyses are shown in Table 1.

## 4. Discussion

In this study of educational characteristics associated with complaint cases, greater age at graduation was statistically significantly associated with increased odds of complaint cases but decreased odds of critique. Moreover, longer duration since completing mandatory specialist

**Table 1. Associations between educational factors and complaint cases with critique by a disciplinary board among GPs in Denmark**

	<b>Unadjusted OR (95% CI) N = 3699</b>	<b>Adjusted OR* (95% CI) N = 3699</b>
Age at graduation from university	<b>1.06</b> (1.01-1.11)	<b>1.06</b> (1.01-1.11)
Length of post-grad education	1.01 (0.99-1.03)	1.01 (0.99-1.04)
Duration since formal education	<b>1.06</b> (1.02-1.11)	<b>1.06</b> (1.02-1.11)
	<b>Unadjusted OR (95% CI) N = 610</b>	<b>Adjusted OR† (95% CI) N = 610</b>
University of Southern Denmark	1 (reference)	1 (reference)
Aarhus University	0.98 (0.60-1.60)	1.07 (0.65-1.77)
Copenhagen University	0.78 (0.47-1.31)	0.81 (0.47-1.37)
<b>Disciplinary board critique</b>		
	<b>Unadjusted OR (95% CI) N = 285</b>	<b>Adjusted OR* (95% CI) N = 285</b>
Age at graduation from university	0.86 (0.74-1.01)	<b>0.85</b> (0.92-1.00)
Length of post-grad education	1.02 (0.97-1.08)	1.02 (0.96-1.08)
Duration since formal education	1.06 (0.95-1.19)	1.07 (0.95-1.21)
	<b>Unadjusted OR (95% CI) N = 196</b>	<b>Adjusted OR† (95% CI) N = 196</b>
University of Southern Denmark	1 (reference)	1 (reference)
Aarhus University	0.81 (0.29-2.31)	0.99 (0.33-2.96)
Copenhagen University	1.42 (0.50-4.02)	1.99 (0.66-6.05)

Bold values indicate significant results.

GP, general practitioner; OR, odds ratio; CI, confidence interval; N, number of observations.

\*Adjustment for sex and number of patients seen per day and a random-effect model were used to correct for possible clustering by municipality.

†Adjusted for sex, number of patients seen per day, age at graduation and duration since specialisation.

education was associated with increased odds of complaints. No association could be established between place of education and complaint figures. Regarding limitations, it should be recalled that analyses were carried out on material from only one year (2007). Medical school now is offered by an additional university, which is not included in the analysis. Additionally it must be mentioned that there may be other characteristics of the GPs associated with the level of malpractice litigation. For example, higher pressure of business previously has been shown to be associated with more complaints (Birkeland et al., 2013).

The fact that no association could be found between place of education and complaint figures can be seen in the context of a former study in the US. In their retrospective analysis of malpractice claims data from three states merged with physician data, Waters and colleagues found differences in malpractice experience among medical schools regarding all specialties as a whole (Waters et al., 2003). However, while surgical specialties had a statistically significant three-fold increase of malpractice claims, no statistical significant association could be established regarding primary care. The authors hypothesised that the associations found might be explained by various factors including education quality, interpersonal skills training, different engagement in, e.g., specialties with more malpractice lawsuits, selection bias regarding student types, and variation in institutional cultures (Waters et al., 2003). Most medical schools deal with education quality questions and continuously exercise efforts at developing pedagogics and curricula (Enarson & Burg, 1992; Noah, 2005; Dolin, 2013). In this regards, fostering critical thinking skills receive increasing emphasis rather than, e.g., “memorization” (Noah, 2005; Universitetspædagogik, 2013). However, research designed to measure and validate the effect of initiatives on physician training outcomes is scant (Noah, 2005). Furthermore, the clinical training usually offered in the

latter half of medical school and during post-graduation residencies have been criticised for suffering from many shortcomings (Cantor, Baker, & Hughes, 1993; Noah, 2005). Various curricular gaps have been proposed, including professional ethics and communication preparation (Hafferty & Franks, 1994; Lefevre, Waters, & Budetti, 2000; Noah, 2005). Hence, in Lefevre et al.'s survey of physician training programmes in risk management and communication skills for malpractice prevention, the authors found a lack of teaching in physician-patient communication at the same time pointing to a "potential area for educational improvement" (Lefevre et al., 2000). Correspondingly the question arises whether medical schools can be held liable for "some relevant shortcomings in the [physician's] training" when patients suffer injuries, however, courts generally have tended towards rejecting such "educational malpractice claims" (Noah, 2005).

It is remarkable that the analysis shows that older graduates are more likely to encounter patient complaints, although these complaints are more frequently unsubstantiated. Research in the area is scant, but one investigation found that younger students in medical school perform better overall in various academic, clinical and professional behaviour assessments (Adam et al., 2015). On the other hand, age at entry was not a predictor for gaining "fitness to practise penalty points" from a committee receiving confidential reports about serious lapses in professional behaviour or about concerns arising from formative end-of-block reviews (Adam et al., 2015). Furthermore, older students specifically outperformed their younger peers in the "communication" segments of the "Objective Structured Long Examination Record" (OSLER) examination (Adam et al., 2015).

As it was mentioned above, authorisation as a GP specialist in Denmark requires a yearlong course of mandatory post-graduate training and there are similar requirements in other countries (Reuter, 1994). Traditionally in the US, family physicians in most states have become board certified in this specialty and, although receiving their medical degrees at the end of medical school, have been required to complete at least one year of clinical training before receiving a license to practice (Reuter, 1994). In this regard, it is acknowledged that residency is an "extension" of medical school, in which "the resident acquires additional knowledge and begins to make independent medical decisions" (Reuter, 1994). Regarding post-graduate education length, Sibbett and colleagues found that 12 months training in general practice in Ireland does not provide doctors with the necessary competencies and confidence to enter independent practice. Extending the period was reported to promote greater professional development, critical evaluation skills, and orientation to lifelong learning (Sibbett, Thompson, Crawford, & McKnight, 2003). The negligible impact of post-graduate education length on complaint occurrence found in the present study conducted in Denmark, having 3-fold mandatory training in general practice, probably must be seen from this perspective.

Continuing medical education aims to ensure competent practice and focus on maintaining or developing knowledge and skills through, e.g., lectures, workshops, conferences and simulation training (Ahmed et al., 2013). Such education usually targets, among others, communication and physical examination skills training (Ahmed et al., 2013). Research has shown that post-graduate education involving several modalities, instructional techniques and numerous exposures to be particularly effective and increasingly is a vital component of healthcare quality improvement (Ahmed et al., 2013; Singh, 2017). Correspondingly, recertification requirements have been proposed to address "The decline in the quality of a doctor's work and [...] increase in the risk of complaints being made against him" however the contents of recertification programmes have given rise to much discussion (Green, 2009; Volpintesta, 2012).

As it was introductorily mentioned, previous research has found an association between higher seniority and complaints by patients (Birkeland et al., 2013; Morrison & Wickersham, 1998; Nash et al., 2009). The present study, however, specifically indicates that the period without further formal education may merit attention since longer duration since completing post-graduate education, in particular, is associated with higher occurrence of patient complaints. By way of one possible explanation, many years of clinical practice with little education may result in the development of routines or coping mechanisms to mitigate difficult patient encounters, or lead to signs of burnout which have been formerly

suggested to be linked with malpractice litigation (Chen et al., 2013). In continuation of the discussion above it has been proposed that negative associations between GP age and patients' evaluations may reflect that patients expect more from older GPs or experience younger GPs as more skilled and, correspondingly, it could indicate possible needs in the continuous medical education of GPs (Heje, Vedsted, Sokolowski, & Olesen, 2007). By way of yet another explanation, associations may reflect that GPs over time adjust their effort in order to counter burn-out' (Heje et al., 2007). Anyway, complaint figures perhaps indicate that post-graduate education may partly counteract the apparent effect of increasing seniority on complaint occurrence.

## 5. Conclusion

Educational trajectories may be associated with the occurrence of complaint cases in general practice. Although findings should be interpreted with care, attention reasonably may be drawn to the role of education trajectories and continuing professional development throughout the clinical career of GPs. Nevertheless, further research is warranted to investigate medical school and post-graduate educational elements with special impact on patient complaints, such as the effect of continuing medical education programmes and of various approaches to communication training.

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