

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

Søren Birkeland and Søren Bie Bogh

## **Accepted Manuscript Version**

This is the unedited version of the article as it appeared upon acceptance by the journal. A final edited version of the article in the journal format will be made available soon.

As a service to authors and researchers we publish this version of the accepted manuscript (AM) as soon as possible after acceptance. Copyediting, typesetting, and review of the resulting proof will be undertaken on this manuscript before final publication of the Version of Record (VoR). Please note that during production and pre-press, errors may be discovered which could affect the content.

© 2018 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

**Publisher:** Cogent OA

**Journal:** *Cogent Education*

**DOI:** <http://doi.org/10.1080/2331186X.2018.1473747>



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

**Running head: Education and medical malpractice**

Søren Birkeland, Søren Bie Bogh

Centre for Quality and Department of Regional Health Research, University of Southern

Denmark

**Corresponding author:**

Søren Birkeland

P.V. Tuxensvej 3-5, 1st

5500 Middelfart

Denmark

Phone: +45 63 48 40 60

E-mail: [Soren.Birkeland@rsyd.dk](mailto:Soren.Birkeland@rsyd.dk)

**Disclosure statement**

The authors report no conflicts of interest.

## **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.

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

## **Education trajectories and malpractice complaints**

### **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, 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 postgraduate education repeatedly has been suggested as a means to optimise the standard of care (Gunn, 1999), it is tempting to hypothesise that increased postgraduate 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.

### **Materials and methods**

#### ***Setting***

The Danish National Health Service provides access to tax-financed health care including GP care for all residents (Birkeland, Depont Christensen, 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, Christensen, 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 postgraduate 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.

### ***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 postgraduate 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, Depont Christensen, 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<sup>®</sup>, version 15 (StataCorp, College Station, TX, USA).

## 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 postgraduate education. The results from the logistic regression analyses are shown in Table 1.

[Approximate location of Table 1]

## 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 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, Christensen, 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 hypothesized 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; Universitetspædagogik, 2013). In this regard, 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 programs 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 toward 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 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 postgraduate 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 postgraduate 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 postgraduate 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 postgraduate 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 has 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 has given rise to much discussion (Green, 2009; Volpintesta, 2012).

As it was introductorily mentioned, previous research have found an association between higher seniority and complaints by patients (Birkeland, Christensen, 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 postgraduate 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 postgraduate education may partly counteract the apparent effect of increasing seniority on complaint occurrence.

## **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 postgraduate educational elements with special impact on patient complaints, such as the effect of continuing medical education programs and of various approaches to communication training.

## **References**

Adam, J., Bore, M., Childs, R., Dunn, J., McKendree, J., Munro, D., & Powis, D. (2015). Predictors of professional behaviour and academic outcomes in a UK medical school: A longitudinal cohort study. *Med Teach*, 37(9), 868-880. doi:10.3109/0142159x.2015.1009023

- Ahmed, K., Wang, T. T., Ashrafian, H., Layer, G. T., Darzi, A., & Athanasiou, T. (2013). The effectiveness of continuing medical education for specialist recertification. *Can Urol Assoc J*, 7(7-8), 266-272. doi:10.5489/cuaj.378
- Birkeland, S., Christensen, R., Damsbo, N., & Kragstrup, J. (2013). Patient complaint cases in primary health care: what are the characteristics of general practitioners involved? *Biomed Res Int*, 2013, 807204. doi:10.1155/2013/807204
- Birkeland, S., Depont Christensen, R., Damsbo, N., & Kragstrup, J. (2013). Characteristics of complaints resulting in disciplinary actions against Danish GPs. *Scand J Prim Health Care*, 31(3), 153-157. doi:10.3109/02813432.2013.823768
- Cantor, J. C., Baker, L. C., & Hughes, R. G. (1993). Preparedness for practice. Young physicians' views of their professional education. *Jama*, 270(9), 1035-1040.
- Chen, K. Y., Yang, C. M., Lien, C. H., Chiou, H. Y., Lin, M. R., Chang, H. R., & Chiu, W. T. (2013). Burnout, job satisfaction, and medical malpractice among physicians. *Int J Med Sci*, 10(11), 1471-1478. doi:10.7150/ijms.6743
- Enarson, C., & Burg, F. D. (1992). An overview of reform initiatives in medical education. 1906 through 1992. *Jama*, 268(9), 1141-1143.
- Green, P. G. (2009). The challenge of recertification. *J Forensic Leg Med*, 16(1), 48-50. doi:10.1016/j.jflm.2008.01.009
- Gunn, I. P. (1999). Regulation of health care professionals, Part 2: Validation of continued competence. *Crna*, 10(3), 135-141.
- Hafferty, F. W., & Franks, R. (1994). The hidden curriculum, ethics teaching, and the structure of medical education. *Acad Med*, 69(11), 861-871.
- Heje, H. N., Vedsted, P., Sokolowski, I., & Olesen, F. (2007). Doctor and practice characteristics associated with differences in patient evaluations of general practice. *BMC Health Serv Res*, 7, 46. doi:10.1186/1472-6963-7-46
- Kohatsu, N. D., Gould, D., Ross, L. K., & Fox, P. J. (2004). Characteristics associated with physician discipline: a case-control study. *Arch Intern Med*, 164(6), 653-658. doi:10.1001/archinte.164.6.653

- Lefevre, F. V., Waters, T. M., & Budetti, P. P. (2000). A survey of physician training programs in risk management and communication skills for malpractice prevention. *J Law Med Ethics*, 28(3), 258-266.
- Morrison, J., & Wickersham, P. (1998). Physicians disciplined by a state medical board. *Jama*, 279(23), 1889-1893.
- Nash, L., Daly, M., Johnson, M., Coulston, C., Tennant, C., van Ekert, E., . . . Walton, M. (2009). Personality, gender and medico-legal matters in medical practice. *Australas Psychiatry*, 17(1), 19-24. doi:10.1080/10398560802085359
- Noah, L. (2005). Medical education and malpractice: what's the connection? *Health Matrix Clevel*, 15(1), 149-163.
- Reuter, S. R. (1994). Professional liability in postgraduate medical education. Who is liable for resident negligence? *J Leg Med*, 15(4), 485-531. doi:10.1080/01947649409510958
- Sibbett, C. H., Thompson, W. T., Crawford, M., & McKnight, A. (2003). Evaluation of extended training for general practice in Northern Ireland: qualitative study. *Bmj*, 327(7421), 971-973. doi:10.1136/bmj.327.7421.971
- Singh, T. (2017). Continuing professional development of doctors. *Natl Med J India*, 30(2), 89-92.
- Universitetspædagogik. (2013). (L. Rienecker Ed.). Frederiksberg: Samfundslitteratur.
- Volpintesta, E. J. (2012). Common sense and the recertification process. *Am J Med*, 125(1), e9; author reply e11. doi:10.1016/j.amjmed.2011.06.017
- Waters, T. M., Lefevre, F. V., & Budetti, P. P. (2003). Medical school attended as a predictor of medical malpractice claims. *Qual Saf Health Care*, 12(5), 330-336.

## ABOUT THE AUTHOR

S. 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. S. Birkeland and S. Bie 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.

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

	Complaint case occurrence	
	Unadjusted OR (95% CI) N = 3699	Adjusted OR* (95% CI) N = 3699
Age at graduation from university	<b>1.06</b> (1.01–1.11)	<b>1.06</b> (1.01–1.11)
Length of postgrad 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)
	Unadjusted OR (95% CI) N = 610	Adjusted OR† (95% CI) N = 610
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)
	Disciplinary board critique	
	Unadjusted OR (95% CI) N = 285	Adjusted OR* (95% CI) N = 285
Age at graduation from university	0.86 (0.74–1.01)	<b>0.85</b> (0.92–1.00)
Length of postgrad 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)
	Unadjusted OR (95% CI) N = 196	Adjusted OR† (95% CI) N = 196
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.