

COMMENTARY

Is this (still) a man's world?

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Abstract

During the past 50 years, the participation of women in medicine has increased dramatically. However, this encouraging influx has not been accompanied by equality for male and female faculty in terms of rank attainment, leadership roles and salaries. There is considerable evidence that women are still under-represented in the higher echelons of academic medicine, either as heads of departments, authors of scientific papers or members of editorial boards. Participation in medical congresses is another important measure of medical achievement; this manuscript comments on the female representation in four of the largest international meetings in the field of intensive care medicine (ICM). It notes the scarcity of female faculty members and proposes several explanations for this phenomenon. The notable under-representation of women in the ICM congresses suggests the existence of a 'glass ceiling' in the field of intensive care medicine, a specialty that, up until today, hasn't been considered as traditionally 'male'.

During the past 50 years, the number of women enrolling in medical school has increased almost nine-fold. In particular, the figures published by the Association of Medical Colleges [1] showed that, in 2005, women in the United States (US) represented 49% of all medical students, compared to 6% in 1960. Similarly in the United Kingdom (UK), women composed 59% of the yearly intake of medical schools in 2009, in contrast to 32% in 1977 [2]. Despite this encouraging influx, there is considerable evidence that women are still under-represented in the higher echelons of academic medicine [3-5]. Studies on surrogate markers of academic productivity, like the authorship of scientific publications [2,4] and the presence on the editorial board of biomedical journals, clearly demonstrate that female representation in these areas is still scanty despite recent increases. The lowest

numbers are recorded in the specialty journals of surgery and orthopaedics (where the proportion of female first authors is only 16.7% and 6.5%, respectively), while in obstetric and paediatric journals the percentage is closer to 40% [4,6,7]. This inequality between the two genders is also evident in other fields of academic medicine, such as rank attainment, leadership roles and salaries [8,9]. The percentage of female principal investigators for the National Institute of Health (NIH) was 24.6% in 2003, with female investigators achieving, on average, smaller grants [2]. Only 12% of department chairs, 17% of full professors and 11% of medical school deans in the US are female [10]. In the UK, the Council of Heads of Medical Schools annual census has shown that, in 2006, female doctors accounted for only 11% of all professorships and only 36% of clinical lecturers' posts [2]. Interestingly, the proportion of women steadily decreases as they progress from assistant to associate and full professor both in 'traditionally male' (21%, 12%, 6% in surgery) and 'traditionally female' (53%, 40%, 22% in paediatrics) specialties [4].

Could this kind of disparity exist only in the aforementioned fields of academia (authorship, editorial board members, professoriate)? Is gender imbalance more prominent in certain countries or specific 'traditionally male' specialties? Four international Intensive Care Medicine (ICM) congresses from three continents were evaluated in terms of female faculty members and speakers. The organizers were the European Society of Intensive Care Medicine (ESICM), the department of Intensive Care Medicine of Erasme University Hospital in Brussels, in association with the Belgian Society of Intensive Care and Emergency Medicine (ISICEM), the Society of Critical Care Medicine (SCCM) and the Australian and New Zealand Intensive Care Society/Australian College and Critical Care Nurses (ANZICS/ACCCN). Using the scientific programmes of the congresses, the proportion of female faculty members was calculated to be 6% in the 32nd ISICEM and 15% in the 24th ESICM meetings that took place in March 2012 and October 2011, respectively. The percentage was higher in the United States 41st SCCM congress (25%), whereas in the upcoming 37th ANZICS/ACCCN women account for 35% of all invited speakers. Interestingly, when the non-medical participants were excluded (mainly

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nurses and pharmacists), the medical female representation amounted to a disappointing 10%, 15% and 16% in the ESICM, SCCM and ANZICS/ACCCN meetings, respectively.

The numbers are, at least, disheartening. As advancement in academic medicine is tightly correlated to the external influence of one's scholarly work and the invitations to present that work publicly, the under-representation of women in the most esteemed intensive care meetings globally poses a significant question: why are women so minimally represented? Surely it cannot be the pipeline effect, the notion that an insufficient number of women have been in medicine long enough in order to advance to the top tiers of academia [3,11]. Women have occupied at least 50% of the medical positions for the past 25 years in several fields, without ever assuming the same proportion of leadership roles as their male colleagues [12,13]. Equally unsupported is the explanation that women are less committed to their careers because of family and other personal responsibilities. Recent studies have suggested that a balance between work and other activities is as important to men as it is to women, at least among the younger physicians [14-16], and that there is no significant gender difference in the reported importance of career advancement or in the extent to which work and personal life conflicted [11,17]. Another proposed explanation, the lack of quality in the work produced by women, has been dismissed by Housri and colleagues [18], who showed an increased frequency with which female authors are cited as well as an increased rate of publication in the journals with higher impact factors [18].

Most likely, the paucity of women speakers in ICM congresses is another manifestation of the 'glass ceiling effect': that is, the observation that despite increased entry of women into the fields traditionally held by men, their advancement into the most prestigious, highest-paying, and leadership positions is still limited [19]. Several explanations have been proposed: traditional gender roles imposed historically, gender discrimination with many, subtle manifestations [20], and a lack of same-sex mentors and role models [21]. The resulting scarcity of women at higher ranks may explain their under-representation in ICM meetings, since the candidate pool of potential speakers remains small. However, another explanation that has been proposed, albeit in a different setting [22], is that the 'homogeneity and concentration of power may have contributed to certain unintended biases' [23]. It is suggestive that out of the 23 scientific advisors and collaborators that contributed to the 32nd ISICEM meeting, none were female (interestingly, all managerial and secretarial staff were women). The numbers were marginally better across the Atlantic, with 6 out of 38 (16%) members of the planning committee of

the 41st SCCM congress being female medical doctors. Could the observed gender imbalance be partly due to the small number of women in decision-making posts?

In conclusion, the scarcity of female speakers and faculty members in ICM congresses strongly suggests the existence of a 'glass ceiling' in the field of critical care. Clearly, these results constitute solely a snapshot of each society's annual congress and, even if every attempt was made to correctly identify the gender of faculty members, there is always room for error. It is also possible that the balance would be somewhat different in ICM conferences of other, 'traditionally female,' sub-specialties (for example, in paediatric ICM). However, the exceptionally low female representation in the congresses validates the perception that although women have made remarkable strides in the last decades, a gender gap still remains. It is present in a specialty that was not, up to now, considered to be gender-biased, and appears to be a global phenomenon. Simply acknowledging the problem will bring us a step closer to its resolution. After all, wasting 'half our genetic pool of intelligence, creativity and experience' will only hinder the improvement of health care for all, a loss that medicine simply 'can't afford' [24].

Abbreviations

ANZICS/ACCCN, Australian and New Zealand Intensive Care Society/Australian College and Critical Care Nurses; ESICM, European Society of Intensive Care Medicine; ICM, Intensive Care Medicine; ISICEM, Belgian Society of Intensive Care and Emergency Medicine; SCCM, Society of Critical Care Medicine.

Competing interests

The author declares that she has no competing interests.

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References

1. *Women in US Academic Medicine: Statistics and Medical School Benchmarking 2004-2005*. Washington, DC: Association of American Medical Colleges; 2005; Table 1.
2. Sidhu R, Rajashekhar P, Lavin VL, Parry J, Attwood J, Holdcroft A, Sanders DS: **The gender imbalance in academic medicine: a study of female authorship in the United Kingdom.** *J R Soc Med* 2009, **102**:337-342.
3. Nonnemaker L: **Women Physicians in Academic Medicine: New Insights from Cohort Studies.** *N Engl J Med* 2000, **342**:399-405.
4. Jaggi R, Guancial EA, Worobey CC, Henault LE, Chang Y, Starr R, Tarbell NJ, Hylek EM: **The 'Gender Gap' in Authorship of Academic Medical Literature - "A 35-Year Perspective.** *N Engl J Med* 2006, **355**:281-287.
5. Margerison C, Morley H.: *Clinical Academic Staffing Levels in UK Medical and Dental Schools*. London: Medical Schools Council and Council of Heads and Deans of Dental Schools; 2007.
6. Okike K, Liu B, Lin YB, Torpey JL, Kocher MS, Mehlman CT, Bhandari M, Biermann JS: **The orthopedic gender gap: trends in authorship and editorial board representation over the past 4 decades.** *Am J Orthop* 2012, **41**:304-310.
7. Singer AJ, Homan CS, Stark MJ, Werblud MC, Thode HC Jr, Hollander JE: **Comparison of types of research articles published in emergency medicine and non-emergency medicine journals.** *Acad Emerg Med* 1997, **4**:1153-1158.
8. Burgess DJ, Joseph A, van Ryn M, Carnes M: **Does stereotype threat affect women in academic medicine?** *Acad Med* 2012, **87**:506-512.
9. John A: **Is there equal pay in healthcare? Not if you are a doctor.** *BMJ* 2012, **345**:e6191.
10. Zhuge Y, Kaufman J, Simeone DM, Chen H, Velazquez OC: **Is there still a glass ceiling for women in academic surgery?** *Ann Surg* 2011, **253**:637-643.

11. Wright AL, Schwindt LA, Bassford TL, Reyna VF, Shisslak CM, St Germain PA, Reed KL: **Gender differences in academic advancement: patterns, causes, and potential solutions in one U.S. college of medicine.** *Acad Med* 2003, **78**:500-508.
12. Bickel J: **Women in medical education.** *N Engl J Med* 1988, **319**:1579-1584.
13. Atre, Vaidya N: **Women chairs in psychiatry: a collective reflection.** *Acad Psychiatry* 2006, **30**:315-318.
14. Dorsey ER, Jarjoura D, Rutecki GW: **The influence of controllable lifestyle and sex on the specialty choices of graduating U.S. medical students, 1996-2003.** *Acad Med* 2005, **80**:791-796.
15. Lambert EM, Holmboe ES: **The relationship between specialty choice and gender of U.S. medical students, 1990-2003.** *Acad Med* 2005, **80**:797-802.
16. Wendel TM, Godellas CV, Prinz RA: **Are there gender differences in choosing a surgical career?** *Surgery* 2003, **134**:591-596.
17. Pololi L, Civian J, Brennan R, Dottolo A, Krupat E: **Experiencing the culture of academic medicine: gender matters, a national study.** *J Gen Intern Med* 2012 [Epub ahead of print].
18. Housri N, Cheung MC, Koniaris LG, Zimmers TA: **Scientific impact of women in academic surgery.** *J Surg Res* 2008, **148**:13-16.
19. Nickerson Kg, Bennett NM, Estes D, Shea S: **The status of women at one academic medical center: Breaking through the glass ceiling.** *JAMA* 1990, **264**:1813-1817.
20. Ahmadiyeh N, Cho NL, Kellogg KC, Lipsitz SR, Moore FD, Ashley SW, Zinner MJ, Breen EM: **Career satisfaction of women in surgery: perceptions, factors, and strategies.** *J Am College Surg*, **210**:23-28.
21. Yedidia MJ, Bickel J: **Why aren't there more women leaders in academic medicine? The views of clinical department chairs.** *Acad Med* 2001, **76**:453-465.
22. Jagsi R, Tarbell NJ, Henault LE, Chang Y, Hylek EM: **The representation of women on the editorial boards of major medical journals: A 35-year perspective.** *Arch Internal Med* 2008, **168**:544-548.
23. Wilkes MS, Kravitz RL: **Policies, practices, and attitudes of North American medical journal editors.** *J Gen Intern Med* 1995, **10**:443-450.
24. De Angelis CD: **Women in academic medicine: new insights, same sad news.** *N Engl J Med* 2000, **342**:425-427.

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