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EDITORIALE

The gender gap in Italian Academic Medicine

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RIASSUNTO

«Il divario tra uomini e donne nelle Facoltà Italiane di Medicina e Chirurgia». *Nelle Facoltà Italiane di Medicina e Chirurgia, la maggioranza degli iscritti sono donne. Anche negli altri paesi Europei e negli Stati Uniti la percentuale di iscrizioni femminili nelle Facoltà di Medicina e Chirurgia è cresciuta sensibilmente. Nonostante l'aumento della popolazione femminile nelle Facoltà Italiane di Medicina e Chirurgia, il divario tra uomini e donne persiste a tutti i livelli: progressione di carriera, salario, posizione editoriali nelle riviste biomediche, grants, posizioni apicali e di responsabilità a livello di tutte le strutture universitarie (Professore di I fascia, Direttore di Dipartimento, Preside di Facoltà, Rettore). Anche il quadro negli altri paesi Europei e negli Stati Uniti d'America, pur migliore della realtà Italiana, evidenzia la scarsa rappresentanza femminile nell'accademia medica. Questo editoriale vuole contribuire ad un dibattito costruttivo sul problema e vuole mettere in risalto il divario esistente nel nostro paese tra uomini e donne nel mondo accademico medico. Analizza le possibili cause per il divario esistente, sottolineando l'urgenza di mettere in campo strategie atte a risolvere in breve un problema che si trascina da anni nell'indifferenza generale delle Istituzioni e del mondo accademico. Dato che la donna è in grado di competere con l'uomo a tutti i livelli, il divario esiste perché il percorso per fare carriera è stato creato da uomini per uomini e non è cambiato nel corso degli anni in risposta alla necessità di avere più ricercatori. Se la donna continuerà ad essere esclusa dalle posizioni di comando dove potrebbe contribuire a scelte e politiche che riguardano l'informazione scientifica, la ricerca, l'assistenza al malato, in altre parole, se la donna sarà costretta a rimanere muta anche nel futuro, la ricerca biomedica non potrà avvalersi di questo prezioso capitale intellettuale. Idee, opinioni, esperienze, creatività, nuovi approcci e critiche costruttive andranno perduti.*

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Academic medicine is the work undertaken by clinicians with responsibilities in both their University and their Hospital Trust. They usually combine service delivery with research, teaching and/or administration (18).

Academic medicine is currently failing to attract and retain women doctors. Given the demographic changes in medical schools, where women account for a high proportion of medical graduates both in Europe (3) and in the United States (9), it is hard to understand the apparent paradox of the increase in the rate of women entering in the field of medicine and the achievement of less success in academic medicine by women compared with men.

The answer remains uncertain and incompletely understood, but it is likely that both institutional barriers to success and sex differences in career and life goals are important (9).

The proportion of women among medical students has increased in Europe and the United States (9, 19). Nevertheless, women remain underrepresented in the university sector, particularly at more senior levels (9).

In the United States, in 1960, 5% of medical students were women, in 2007, the numbers of women and men in medical schools were approximately equal (~49 percent). However, in 2007, only 17 percent of full professors, 25 percent of associate professors and 39 percent of assistant professors were women (12). In 2005, only 11 percent of department chairs were women (17), and 11 medical schools were held by deans women despite the fact that there are 125 teaching institutions (14).

In the United Kingdom, women account for more than 40 percent of medical graduates in the past 20 years, but one in 5 medical schools do not have a female professor, two out of 33 heads of UK medical schools are women and at professional level only 11 percent of clinical academics are women (3).

In Italy, in 2003, 67.8 percent of medical graduates were women, but in 2005, only 26.5 percent of teachers in Medical School were women (5). The annual report (end of 2007) on the Medical Faculty, at the University of Padova, documents the following figures: women full professor, 7 percent; women associate professor, 30 percent; women researcher, 44 percent. The total number of women in the Medical Faculty was 21 percent (22).

The figures of University of Padova are not an isolated phenomenon since national data for the academic year 2007-2008 by the Minister of University and Research show that figures are even worse and support the suggestion that gender barriers to academic medicine in Italian medical schools are not illusory (16). In 2007, the percentage of female full professors was 9.8, associate professors 22 percent, and researchers 36.4 percent (table 1). In the same year, the percentage of women graduating with honors from Italian medical schools was 27.8 percent-more than twice the rate in men (13.6 percent).

So far, only 15 percent of full professors in European universities are women, and women are under-represented on decision-making scientific boards in almost all European countries (8).

What, then, can be done?

This gender disparity is multifactorial and incompletely understood. Among frequent reasons proposed are recalcitrance to inclusivity in what had been, at the West, an almost exclusively male profession; the possible delay or interruption in a woman's productive years owing to family responsibilities; and a persistent scarcity of mentors.

Mentoring is central to academic medicine, has an important influence on personal development, career choice and guidance, research productivity, including publication and grant success (19).

Further, mentors are usually senior faculty members and few senior faculty members are women (7). Mentors open doors. Mentoring is important since breaking into the group doesn't occur by accident (7).

Table 1 - Gender Distribution of Faculty Positions in Italian Academic Medicine*

	Gender N (% of total)	
Rank	Men	Women
Full Professor	2260 (90.2)	244 (9.8)
Associate Professor	2520 (78.0)	713 (22.0)
Researcher	3205 (63.6)	1833 (36.4)

* Academic year 2007-2008

In the United States, men and women are equally prepared for careers in the biomedical sciences (13), and both have near-equal success gaining National Institutes of Health funding, making it unlikely that the slow academic arc owes to negative selection from granting decisions.

The proportion of female physician-investigators as the first or senior author in prominent medical journals increased notably from 1970 to 2004: from 5.9 to 29.3 percent and from 3.7 to 19.3 percent, respectively (10). The increase was more sharply in *Obstet Gynecol* and *Journal of Pediatrics*. Despite this, a gender gap in authorship remains, especially among senior authors and editorial commentators - a likely result of the smaller pool of female senior faculty members.

The prestigious positions of editor-in-chief and editorial board member allow one to implement critical policy decisions affecting the dissemination of scientific information. They are 21.5 percent in general medical journals, 25 percent in clinical speciality medical journals, and 14.5 percent in biomedical science journals (24). That the majority of these posts continue to be held by men serves to mute the experience and perspective of female scientists. If women's representation remains low, experiences, ideas, creativity, and critical insights are wasted with a loss of intellectual capital for biomedical research (11). Medicine simply cannot afford that loss (7).

Studies have also documented that women receive lower salaries than men with similar experience and academic rank (2, 4).

Recently, it has been suggested that disparity might be particularly important when female scientists are on the bridge to independence (15, 23). Waisbren et al. showed that gender disparity in grant funding is largely explained by gender disparities in academic rank. They also showed that gender differences in grant application behaviour at lower academic ranks also contribute to gender disparity in grant funding for medical science. This issue has been recently examined by Ley and Hamilton who evaluated several NIH grant applications that reflect this career stage (13). When they pooled the data for all investigators and all grant applications from 2003 to 2007, the success rates for men and women were equivalent (32% success for men, and 31% for women). However, data suggested that women chose to leave the NIH-funded career pipeline at the transition to independence, i.e. in the late postdoctoral and early faculty years. Thus, authors suggested the need that NIH and academic leaders develop effective strategies to retain women at the juncture between postdoctoral training and independent career, otherwise biomedical research will undergo a loss of intellectual capital.

A survey on 270 female academic surgeons in American medical schools showed that they are well trained with 50.2 percent having two or more Board certificates (25). However, most of them were clinically active assistant or associate professors, whereas only 12.4% were tenured professors and three women were chair of the department confirming that true leadership positions remain elusive in academic general surgery.

In the United Kingdom, female sex itself is not a direct barrier to the career progress of doctors in the national health service (NHS) (20). However, authors underlined that their findings do not necessarily apply to the promotion of women in academic medicine. In fact, they emphasized that a large body of evidence indicates that women working in academic medicine are disadvantaged both directly and indirectly.

Further, a recent editorial published on *The Lancet* underlined that few women are medical directors of NHS trusts or chair professional executive committees on primary care trusts (21).

A study focusing on sexual discrimination individualized two serious problems in academic medicine: first, "*We all live with a social concept, tacitly accepted by both men and women, that in the medical profession men are dominant and women subservient*"; second, *"For leaders we pick men who we think are aggressive, tenacious, powerful, and self-sufficient- all adjectives that, when applied to a woman of similar character, somehow mutate to become strident, nasty, emasculating and stubborn"* (6).

What happens nowadays? Does sexual discrimination exist in academic medicine?

The perpetuation of the cultural norm involving the exercise and display of power still exists. There

is a need for the man to demonstrate and validate the power relationship.

I can sum up my thinking offering five points of consideration: first, I would choose equity that is freedom from bias or favouritism; second, funding, promotion and nomination procedures lack transparency, and this lack tends to disadvantage women, particularly in top positions in science; third, there is the need for establishing a new culture, open and transparent; fourth, for institutional equity, women should be on every research committee and departments should keep lists of female candidates for key roles; fifth, female scientists have come a very long and difficult way, but there's still a very long road ahead.

Recommendations and strategies to address the problem are summarized in the 2008 European Communities report (8). They include commitment to the goal of equality, the need for gender balance, for transparent procedures, for knowledge, for urgency to act since the potential of women in research is under-utilised.

To sum up, although female admissions have risen substantially in Italy over the past decade, female faculty ranking remains quite junior. Surely it is time to implement strategies to reduce gender disparity in the achievement of leadership positions in academic medicine, particularly in Italy where the gap is wide.

Nancy Andrews has recently expressed my thought:

"The challenges that women face in academic medicine are familiar: feeling invisible and underestimated, feeling isolated in a culture without women, and questioning one's perception of reality. These pressures increase over time, the pattern repeats, and the discrimination persists" (1).

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