



Correspondence

**Women in radiology: Breaking the barriers of gender diversity****An opinion on the current literature***Dear Editor*

In the corporate world of the 21st century, companies are appreciating the fact that having more women in leadership roles, increases the competitiveness within the workplace, directly leading to greater economic success. Research across multiple industries has shown that having a gender diverse workforce, augments innovation and analytical thinking by means of combining different viewpoints, skill-sets, and decision making tools. Gender diversity should not be seen as a metric, instead it can be used and applied as tool for excellence. [3]

It is evident that the number of women in the medical field has dramatically increased in comparison to earlier generations. Women now make up half or more of medical students in Europe and the USA. [3]

In recent times, we have seen female representation improving across medical fields, reaching equivalence or even becoming the gender majority in departments such as paediatrics, obstetrics, pathology, family medicine and psychiatry. However, large discrepancies remain and are most evident in surgical subspecialties and diagnostic radiology. According to a report by the Association of American Colleges and Universities in 2016, radiology has one of the lowest percentages of females in the faculty at 28%, only better than general surgery (22%) and orthopaedic surgery (16%). [1]

Other than the United States, this discrepancy is as prevalent in many other countries worldwide, where in total, less than a third of radiologists are female. [3] In 2017, a cross-sectional study was done in order to assess gender disparities that exist in other countries. Radiology organizations were contacted via email and requested to provide membership statistics. Of 29 professional radiology organizations across 26 countries, only 33.5% of their members were women. [1]

Where one might initially question the admission criteria of many radiology faculties, and have a concern about gender bias, it seems as if the main reason for this gender gap is a decreased interest amongst female junior doctors.

In a medical graduate class of 100 junior doctors, women were well represented, equating to just less than 50% of the sum total. However, out of 100 applicants for radiology residency in that same year, only 29 women applied for the position. This would imply that the cause for the decreased number of women in radiology is secondary to its decreased popularity amongst younger medical professionals and prospective residents. [5]

As a speciality, diagnostic radiology is unmistakably different from the other current male-dominated medical specialities as it is first and foremost not surgical in nature. In addition, it has many characteristics that should in actual fact make it more desirable to both genders alike; for example the ability to work part-time and remotely with predictable scheduling and reasonable call hours makes radiology seem as an overall appealing career choice.

This brings on the question: why are young female doctors not interested in Radiology as a speciality? Previous authors have mentioned the following contributing factors: the ongoing scarcity of existing female mentors, lack of patient contact within this speciality, disinclination towards physics and technology and lack of exposure during primary medical training. [1]

On the topic of the above-mentioned shortage of female radiology mentors, gender diversity at higher levels of leadership and academic rank was assessed, which also revealed exponentially less female representatives. Within the European Society of Radiology, only 20% of chair positions in 2020 were filled by women; a phenomenon that was referred to as “the leaky pipeline”. With regards to the decreased amount of female radiologists in leadership positions, invisible societal dynamics can contribute as the puncturing tools for this “leaky pipeline”. Family situations can contribute as a barrier to long term career growth and success. Promotions to higher positions might lead to the renegotiation of roles within a household, and ultimately conflict between partners. This anticipation of conflict is a self-posed constraint of female radiologists, limiting their ambition not only to climb the ranks within their work place, but also to be involved in motivating younger prospective female colleagues to choose radiology as a speciality. [3]

In reviewing the literature to examine the effects of gender and socialization in medical school on specialty choices among women, it was evident that further research is needed to extrapolate the possible reasons why women are not choosing diagnostic radiology as frequently as one might predict based on current numbers of female medical graduates, despite the portrayed lifestyle of a diagnostic radiologist. Once clear reasons have been identified through ongoing research, medical schools can ensure that women are making informed decisions regarding their specialty choices. [4]

At the European Congress of Radiology (ECR) held in Vienna in 2019, a new initiative called “Women in Focus” was launched. This event was organized by Professor Hedvig Hricak, previous Chair of the Department of Radiology at Memorial Sloan Kettering Cancer Centre in New York. The program comprised of a series of non-scientific sessions dedicated to women with the aim of not only celebrating the crucial role that women have in healthcare, but also offering insight and advice through interactive sessions. Multiple speakers from different healthcare industries and backgrounds discussed their opinions on topics associated with gender diversity in the healthcare setting. Each session approached current obstacles in female leadership, mentoring and the generational progression of women in healthcare.

In the session ‘Leadership and Mentorship’, Dr May Abdel-Wahab stated that effective mentorship is one of the most important determinants of success. [2]

Early mentorship is a critical factor that can combat the lack of female radiology applicants. Through early mentorship, positive

experiences of radiology can be shared and common myths regarding a life in radiology (such as minimal interpersonal contact, radiation exposure risks and confinement in a dark room) can easily be disproved. To target biological and societal barriers, senior radiological governing bodies can assist in the recruitment process by enhancing a female- and family- friendly career path. This can be made possible by implementing part-time positions, on-site childcare and formal parental leave policies. Another point of focus should be placed on recruiting. As mentioned above, women make up half or more of medical school graduates, thus marketing should be targeted to include junior female doctors. The formation of 'Women in Radiology' groups is an impactful suggestion that can allow young medical professionals to build relationships, network and gain information as well as insight to kickstart their careers as prospective radiologist trainees. [3]

In conclusion, the presence of a gender diverse department is important to ensure that the concerns and needs of all patients are adequately addressed. The reason why women are underrepresented in specialist fields like Radiology, is due to the underreported difficulties that can be addressed by means of awareness, mentorship and adequate support structures.

With ongoing research on this topic as well as implementing the above mentioned plans, the recruitment of junior female radiologists can be increased, and then be continued on to ensure that the many talented women in radiology, achieve their full potential.

CRedit authorship contribution statement

Charissa Jansen: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. **Xander van Heerden**: Writing – review & editing, Visualization, Software,

Resources, Formal analysis, Data curation. **Micheál Newell**: Conceptualization, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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