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EDITORIAL

Assessment of Gender Bias in the Farmacia Hospitalaria Journal 2016-2018

Evaluación del sesgo de género en la revista Farmacia Hospitalaria 2016-2018

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Gender bias in the field of medicine generally refers to the involuntary but systematic exclusion of women or men, stereotyped prejudices concerning their health, behaviour, experience, needs, desires, and so on, or the neglect of gender issues that are relevant to health care[1]. The phenomenon of hierarchical segregation has been identified in editorial settings and in scientific publications. Despite increasing numbers of postgraduate women working in the field of science, gender inequality still remains as they rise through academic levels[2] and such inequality is also reflected in scientific publications.

Many scientific journals have pondered this issue[3-6], given that inheriting the gender imbalance that pervades contemporary societies, apart from being unjust, also entails losing part of the talent, creativity, and sensitivity women bring to any collective[2]. Unfortunately, gender bias is still present in the biomedical setting[1].

In recent years, there has been an increase in social research on gender inequality in Spain. Its results have reached the general public, facilitating striking advances in Spanish society. However, the situation in the scientific community leaves much to be desired. In the setting of pharmacy, there is still significant gender imbalance in positions of scientific leadership[7]. Scientific societies in Spain have rarely investigated this phenomenon. For example, the outstanding report on the situation of hospital pharmacy services in Spain by the Spanish Society of Hospital Pharmacy (SEFH)[8] does not provide gender-disaggregated data on health care professionals.

The desired aim of gender equity is to strike a balance in which neither gender is unjustly benefited to the detriment of the other. However, this objective balance does not always need to be set at 50%, because it depends on the starting point of the professional collective in question. Applying the general percentage of women in the Spanish population (around 50%) to specific subpopulations may sometimes lead to severe bias. Thus,

we determined the percentage of female hospital pharmacists. The SEFH database[9] shows that 72.4% of its 3252 permanent members are women. This percentage is similar to that of female pharmacists registered in Spain in 2017 (71.6%)[10]. The pharmaceutical profession is currently dominated by women, and Spain is not an exception to this trend. In Canada, for example, more than 75% of the pharmacists working in hospitals are women[7]. Therefore, it is important to point out that the baseline figure of 72.4% should be used, and not 50%, to investigate any aspect of gender inequality in the collective of pharmacists and hospital pharmacists in Spain.

Evidence has also been found for the underrepresentation of women in peer-review processes, given that editors of both sexes have a substantial bias toward their own gender (homophily)[11].

To assess possible gender bias in the journal Farmacia Hospitalaria, we analysed three areas: authors, referees, and editors.

We reviewed issues from 2016 to issue 4, 2018, including original articles (86), brief originals (8), reviews (10), special articles (5), and brief communications (2) and determined the gender of all authors, the first authors (FA), and the last authors (LA) (usually called "senior authors" in the publishing setting), and corresponding authors. A differential analysis was conducted of the authorship of the editorials published in the study period, recording the gender of all authors and FAs.

We analysed 111 articles and 10 editorials that involved 617 and 22 authors, respectively. Table 1 shows the results of the review of gender inequality between authors.

Table 1
Gender of Authors of Articles Published in Farmacia Hospitalaria

Number of articles: 111				
		n	%	Bias, %[a]
Total number of authors	Men	211	32.2	
	Women	406	65.8	-6.6
First Author	Men	35	31.5	
	Women	76	68.5	-3.9
Last Author	Men	55	49.5	
	Women	56	50.5	-21.9
Corresponding author	Men	39	35.1	
	Women	72	64.9	-7.5
Editorials (total number of authors)	Men	12	54.5	
	Women	10	45.5	-26.9
Editorials (first author)	Men	5	50.0	
	Women	5	50.0	-22.4

a Difference between the observed percentage of women and the percentage of female members of the SEFH (72.4%).

The highest level of gender inequality was observed between the authors of editorials, followed by FAs of editorials and LAs of articles.

However, we did not find any significant gender inequality between the FAs of articles.

Typically, FAs of articles make the greatest contribution to a scientific publication (in many cases, only the first three authors are considered in relation to academic merit), whereas LAs are typically tutors or directors, regardless of their actual contribution to the study. We studied the FALA combination according to their gender and obtained somewhat surprising results. The FALA distribution across articles was as follows: Female FA and male LA (36%); female FA and LA (32%); male FA and female LA (18%); and male FA and LA (14%).

Furthermore, of the 129 active referees of the journal in June 2018, 73 (56.6%) were women. According to the reference values used, this result suggests a gender bias of 15.8%.

We also studied the composition of the editorial board of the journal during its last three changes since 2013. Gender imbalance gradually decreased from 22% in the initial study period to 11% in 2018.

According to the data obtained, Farmacia Hospitalaria shows signs of gender bias that are similar to those found in the Spanish socio-cultural environment, with a marked hierarchical bias towards the male gender.

Although the results concerning all authors and FAs of articles show an almost equally balanced gender distribution, we found a marked tendency to male bias regarding LAs (senior authors). This can understood as the male gender being overrepresented in higher positions of professional leadership and in editorial authorship.

Current Spanish regulations on gender equity recommend that the distribution of genders in professional institutions should range between 40% and 60%. However, this recommendation should be interpreted with caution when applied to groups in which there already is a significant gender imbalance, such as hospital pharmacists. Guidelines have been published to improve the challenge of gender imbalance in scientific societies and their publications, which may help rectify the bias observed in our journal[2].

We hope that both our female and male readers will find food for thought in this review, and that it will help avoid future gender inequity in the field of scientific publications.

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