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Gender gap in *Cirugía Española* publications☆

Brecha de género en las publicaciones de *Cirugía Española*

The term gender gap (GG), coined by E. Smeal in 1980, is an empirical and analytical construct which refer to the difference between categories of a variable in relation to male and female rates.[1] Scientific publications (SP) are a measure of success in academic medicine.[2] In the last decade a few articles have been published on the GG in SP.[3,4] Our aim is to determine whether GG exists in the SPs of *Cirugía Española*, the only Spanish general surgery journal indexed in Pubmed.

Methods

We conducted a literature review in *Cirugía Española*, including all SPs from the years 2000, 2010 and 2020. The following data were collected: gender, first and last author, type of article (special article, scientific letter, editorial, image of the month/video, innovation in surgical technique, original and systematic review); area of training (AT) (bariatric, carcinomatosis, major outpatient surgery, colorectal, endocrine, oesophagogastric, management/quality, hepatobiliopancreatic, infections, breast, oncology, wall, thoracic surgery, transplant, trauma/urgencies, vascular surgery, and others); multicentre article (yes/no); hospital level (1/2/3), existence of residency programme and seniority (<10 years, >10 years), autonomous community and province. The SPs were reviewed online at the Spanish Surgery website (https://www.elsevier.es/es-revista-cirugia-espanola). The AEC was asked for the gender distribution of its associates. A 50% male/female distribution was considered fair. An association analysis was performed on frequencies and prevalences observed with the expected frequencies using the non-parametric Chi-square X2 test for nominal or qualitative variables. Statistical analysis was performed with SPSS v.25®.

Results

The rate of female AEC members has progressively increased from 18.3% in 2000 to 42.7% in 2020. The literature review included a total of 673 CPs. Of these, 291 (43.2%) correspond to 2000, 217 (32.2%) to 2010, and 165 (24.5%) to 2020. In 2000, 10% of the first authors were female, 29.5% in 2010 and 44.2% in 2020. The female gender of the last author was 10.7%, 13.8% and 15.2%, respectively (Fig. 1A and B).

Regarding the relationship between article type and first author, we observed that the subtypes closest to equity were image/video of the month (40.7%) and scientific letter (37.3%). As last author, the highest percentage of female gender was in image/video of the month (18.5%) and the lowest was in special article (0%) and editorials (4.5%) (Fig. 1C and D). The results by CA showed that the only section with an increasing trend in terms of female first authorship was Colorectal with 12% in 2000, 30% in 2010 and 42.9% in 2020. It is noteworthy that there is no female representation either as first or last author in the management/quality area. Only infections in 2010 (60%); trauma/urgencies 2010 (54.4%); oncology 2020 (75%) and vascular 2020 (58.3%) managed to overcome the equality barrier.

We performed an analysis of the first author/last author binomial classifying it as Female/Female (F/F), Female/Male (F/M), Male/Female (M/F) and Male/Male (M/M). We obtained 3.3% of F/F, 21.4% of F/M, 9.5% of M/F and 65.8% of M/M. The modality that increased the most during the period studied was F/F representation (Table 1).

Discussion

Our analysis shows first and last authored GG in SPs, although there is a progressive increase in the number of SPs as first

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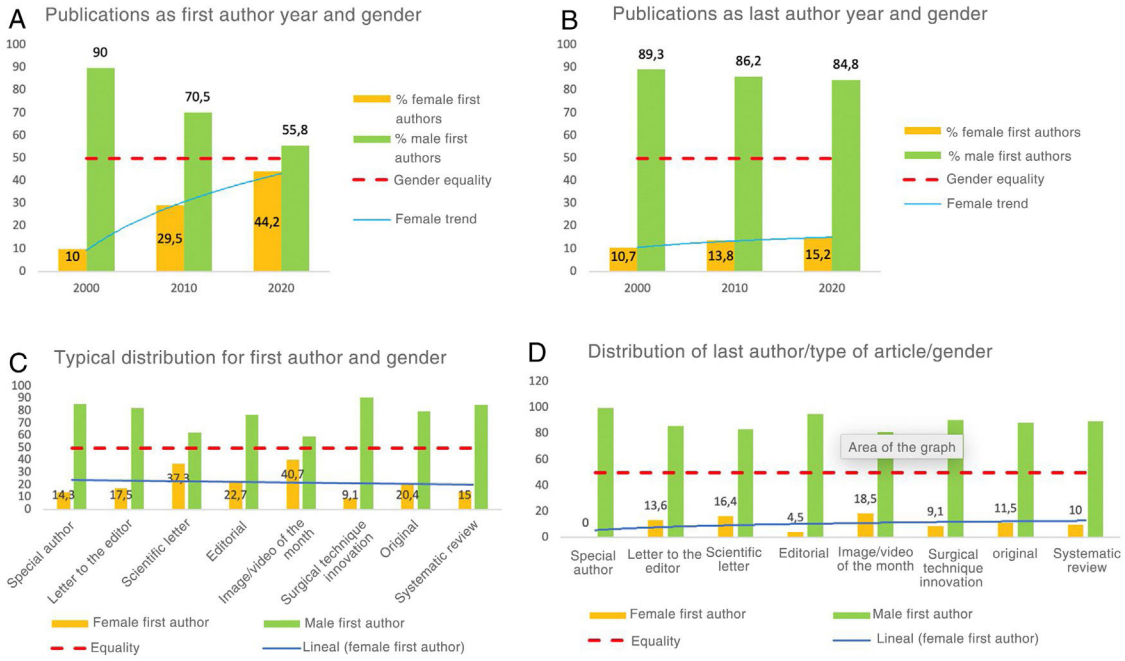

Fig. 1 – (A,B) First author and gender distribution; last author year and gender distribution. (C,D) Type of article, first author and gender distribution; 2b type of article, last author and gender distribution.

Table 1 – Distribution of frequencies by gender and first/last author.

	First female author n (%)	First male author n (%)	p value	Last female author n (%)	Last male author n (%)	Total n	p value
Total bibliographic review	166 (24.7)	507 (75.3)		86 (12.8)	587 (87.2)	673	.329
Year			<0.001				
Year 2000	29 (10)	262 (90)		31 (10.7)	260 (89.3)	291	
Year 2010	64 (29.5)	153 (70.5)		30 (13.8)	187 (86.2)	217	
Year 2020	73 (44.2)	92 (55.8)		25 (15.2)	140 (84.8)	165	
Type of article			<.001				.258
Special article	4 (14.3)	24 (85.7)		0(0)	28 (100)	28	
Letter to the editor	18 (17.5)	85 (82.5)		14 (13.6)	89 (86.4)	103	
Scientific letter	66 (37.3)	111 (62.7)		29 (16.4)	148 (83.6)	177	
Editorial	5 (22.7)	17 (77.3)		1 (4.5)	21 (95.5)	22	
Image/video of the month	22 (40.7)	32 (59.3)		10 (18.5)	44 (81.5)	54	
Surgical technique innovation	2 (9.1)	20 (90.9)		2 (9.1)	20 (90.9)	22	
Original	46 (20.4)	180 (79.6)		26 (11.5)	200 (88.5)	226	
Systematic Review	3 (15)	17 (85)		2 (10)	18 (90)	20	
Training area			.072				.507
Bariatrics	2 (18.2)	9 (81.8)		0(0)	11 (100)	11	
Carcinomatosis	1 (100)	0(0)		0(0)	1 (100)	1	
CMA	0(0)	3 (100)		0(0)	3 (100)	3	
Colorectal	24 (23.8)	77 (76.2)		15 (14.9)	86 (85.1)	101	
Endocrinology	9 (27.2)	25 (72.7)		4 (12.5)	30 (87.5)	34	
Esophagogastric	10 (23.3)	33 (76.7)		4 (9.3)	39 (90.7)	43	
Management/quality	0(0)	14 (100)		2 (14.3)	12 (85.7)	14	
HBP	25 (27.2)	67 (72.8)		9 (9.8)	83 (90.2)	92	
Infections	13 (40.6)	19 (59.3)		6 (19.4)	26 (80.6)	32	
Breast	6 (23.1)	21 (76.9)		2 (7.7)	25 (92.3)	27	
Oncology	6 (33.3)	12 (66.7)		3 (16.7)	15 (83.3)	18	
Wall	11 (23.4)	36 (76.6)		10 (21.3)	37 (78.7)	47	
Chest	5 (27.8)	13 (72.2)		4 (22.2)	14 (77.8)	18	
Transplant	2 (16.7)	10 (83.3)		1 (8.3)	11 (91.7)	12	
Trauma emergencies	22 (34.4)	42 (65.6)		7 (10.9)	57 (89.1)	64	

Table 1 (*Continued*)

	First female author n (%)	First male author n (%)	p value	Last female author n (%)	Last male author n (%)	Total n	p value
Vascular	11 (36.7)	19 (63.3)		5 (16.7)	25 (83.3)	30	
Others	19 (15.2)	106 (84.4)		13 (10.4)	112 (89.6)	125	
Type of Hospital			.007				.722
Level 1	0(0)	100(3)		0(0)	100(3)	3	
Level 2	17.6(18)	82.4(84)		13.7(14)	86.3(88)	102	
Level 3	23.3(146)	72.7(388)		12.4(66)	87.6(468)	534	
Residency programme			.001				.05
Yes <10 Years	0(0)	6 (100)		3 (50)	3 (50)	6	
Yes >10 Years	153 (28)	394 (72)		68 (12.4)	479 (87.6)	547	
No	11 (13.6)	70 (86.4)		12 (14.8)	69 (85.2)	81	
Multicentre			.912				.089
Yes	5 (20.8)	19 (79.2)		1 (4.2)	23 (95.8)	24	
No	122 (25.1)	365 (74.9)		60 (12.3)	427 (87.7)	487	
Nc	36 (24.7)	110 (75.3)		25 (17.1)	121 (82.9)	146	

MOS, major outpatient surgery; HBP, hepatobiliopancreatic.

author. Other articles on GG have shown the same tendencia.[5] This increase is minimal as last author, a position often reserved for the head of service. This could be due to the phenomenon known as the "glass ceiling" or the limitation of women's promotion to managerial positions.[6]

The analysis by type of article showed inequality in all subtypes but especially in editorials, innovation in surgical technique, special article and systematic reviews. The most recent types (picture/video of the month and scientific letter) were the closest to equality. This has also been observed in GG studies from other specialties with lower numbers of original studies and editorials by women.[2]

Studies on BG have shown that when the first author is a man, it is more likely that the last author is also a man.[3] We found 65.8% M/M authors vs. 3.3% F/F authors. The combination that grew the most was F/F from 0.3% in 2000 to 7.3% in 2020.

There are multiple theories about GG. The most recognised is the so-called "leaky pipeline" which describes how women start an educational and professional career, and then drop out for a variety of social and professional reasons.[7] Possible solutions to reduce GG are: elimination of informal networks in selective processes, with formal, structured and transparent recruitment; increase of women researchers as it could cause the "gender pull phenomenon" or inclusive mentoring.[8–10]

Our study has limitations: exclusive review of *Cirugía Española* and not of the entire scientific production, and the absence of reliable data on the distribution by gender and CA of Spanish surgeons. But we believe that its strength is that it is the first Spanish study on GG in SP.

In conclusion, we have observed GG in Spanish Surgical SP in terms of first and last authorship. It would be desirable to develop AEC-sponsored policies to reduce GG.

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The acceptance of xenotransplantation among African immigrants living in Spain☆

Aceptación del xenotrasplante de órganos entre los inmigrantes Africanos residentes en España

Despite the improvement in donation rates,[1] human organs are insufficient to cover basic transplantation needs. In recent months and after overcoming various immunological problems, xenotransplantation has been growing in importance since the first clinical xenotransplantation was performed.[2] This unlimited source of organs could be the definitive solution for transplantation.

However, xenotransplantation involves genetic manipulation of animals as well as ethical and moral factors that may lead to social rejection.[3] In countries like Spain that have preclinical xenotransplantation programs, social acceptance among the existing population is quite favourable,[4] but the same is not true of immigrant population groups.[5,6] This is important in southern Europe, where the percentage of the immigrant population is increasing, specifically Latin American and African immigrants. The attitude of the Latin American population towards xenotransplantation has been shown to be less accepting than the Spanish population.[6] The attitude of the African population, which is the largest immigrant population group in Spain and Europe, has not yet been studied.

The objectives of this study are to determine the attitude towards solid organ xenotransplantation among the population born in Africa residing in Spain and to analyze the associated psychosocial variables.

The project was carried out in the population ≥15 years of age born on the African continent and residing in Spain, taking advantage of the infrastructure of the project '*Organ donation among the African immigrant population*' carried out by the International Donor Collaborative Project.[7] The sample was stratified based on the nationality of origin of the respondent, age and sex.[7] Their attitude was analyzed using the validated Xenotransplantation attitude questionnaire '*PCID - XenoTx Rios*' (Questionnaire of the International Collaborative Donor Project on the attitude towards Xenotransplantation, developed by Dr Ríos)[8] with a total explained variance of 61.18% and a Cronbach's alpha internal consistency reliability coefficient of 0.72.

The questionnaire was self-completed anonymously. In each of the population centers where the sampling was carried out, the cooperation of immigrant associations was necessary to locate potential participants. For each case, we verified that the potential survey subject met the stratification criteria, and the participants were explained that the opinion survey was completely anonymous.

For the statistical analysis, the Student's *t* test, chi-squared test, and a logistic regression analysis were applied.

The degree of completion of the questionnaire was 87% (3618 surveys completed by 4145 selected participants). Regarding the attitude towards xenotransplantation, if the results were comparable to those achieved with human donors, 15% (n = 548) would be in favor, 40% (n = 1431) undecided, and the remaining 45% (n = 1639) against. Regarding the attitude if the results were worse than those achieved with human donors, 10% (n = 373) would be in favor, 42% (n = 1527) undecided and the remaining 48% (n = 1718) against.

After completing the bivariate analysis (Table 1), a logistic regression analysis was carried out, which obtained the

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