



## SPECIAL ARTICLE

# Gender inequalities on editorial boards of indexed pediatrics journals

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**BACKGROUND:** The presence of women in decision-making positions, such as on editorial committees of biomedical journals, is not the same as that of men. This paper analyzes the gender composition of editorial committees (EBMs) and editors-in-chief (ECs) positions of pediatric journals.

**METHODS:** The gender of EBMs and ECs of 125 journals classified in the pediatrics area of the Journal Citation Report (JCR) was analyzed. The following indicators were calculated: gender distribution of ECs and EBMs by journal, publisher, subject speciality, country, quartile of the journal in JCR and country of affiliation of the members.

**RESULTS:** The total number of EBMs was 4242. The distribution by sex of the ECs was 19.44% women and 80.56% men, while that of the EBMs were 33.05% women and 66.95% men. Twenty journals exhibited a greater representation of women than of men, and in four there was parity. Journals with greater participation of women specialized in nursing and physical therapy and were related to nutrition (lactation and breastfeeding).

**CONCLUSIONS:** Only one-fifth of ECs and one-third of EBMs are females. Women's participation is higher in journals related to nursing, physical and occupational therapy, and nutrition. The United States has the highest number of EBMs, followed by the European Union.

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**IMPACT:**

- Only one-fifth of Editors-in-chief in pediatrics journals are female.
- Only one-third of Editorial Board Members in pediatrics journals are female.
- Women's participation is higher in editorials committees in pediatrics journals related to nursing, physical and occupational therapy, and nutrition.
- Medical and pediatric associations and societies must work together to eliminate the disparities that exist between women and men.
- Achieving gender equity and empowering all women is one of the World Health Organization's Sustainable Development Goals.

**INTRODUCTION**

Gender parity has a fundamental influence on the prosperity of society, since women account for half of the world's available talent, and only their participation allows for growth, competitiveness, and the future preparation of economies and enterprises.<sup>1</sup>

In recent years, progress has been made in achieving greater representation of women at various levels, as reflected, for example, in the percentages of women in senior positions in academic centers, professional associations, and medical societies. Women have also increased their presence as principal investigators in funded projects, as well as guest speakers at scientific conferences and on the editorial boards of scientific journals.<sup>1–5</sup>

Women's participation in higher education has increased in recent decades and in many countries of the world, even exceeds that of men<sup>2</sup>. However, the percentage of women promoted to leadership positions remains low, and as they move up the academic ladder, their presence decreases, a phenomenon referred to as the "glass ceiling."<sup>6–9</sup>

Achieving gender equity and empowering all women is one of the World Health Organization's Sustainable Development Goals. Goal 5, entitled "Achieve gender equality and empower all women and girls," reports that women spend on average about three times more hours per day than men on unpaid care and domestic work, limiting their available time for paid work, education, and leisure, and further reinforcing gender-based socioeconomic

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disadvantages.<sup>10</sup> The World Economic Forum's 2020 report predicts that it will take 12 years to achieve gender parity in education and that this parity has been fully achieved in only 40 of the 153 countries classified.<sup>1</sup> Therefore, despite these advances, much remains to be done to achieve equity, a situation that extends to medicine in general and to pediatrics in particular.<sup>11</sup>

Scientific journals are considered to be the primary medium for the transmission of knowledge. Running a scientific journal or being a member of its editorial board is a position and recognition that can only be achieved after a proven research career. Women comprise the majority of pediatricians in the United States<sup>5</sup> and might be assumed to constitute the majority of Editorial Board Members (EBMs) and Editors-in-Chief (ECs) of pediatric journals. To our knowledge, however, no studies have been published that examine the role of women in large samples of global pediatric journals. Spector's study analyzed, among other variables, the presence of women on the committees of three major pediatric journals.

Bibliometric studies provide useful data and indicators for comparison between the sexes that make it possible to identify existing biases, as well as to measure women's progress in academic and professional careers through longitudinal data analysis and transparent reporting. Together with other economic and social indicators, they enable a scientific approach to identifying and addressing gender disparities.<sup>12–18</sup> The aim of this study was to identify and quantify gender differences from a bibliometric point of view in ECs and EBMs of pediatric journals included in the Science Citation Index Expanded (SCIE) of the Web of Science (WoS) Core Collection.

## MATERIALS AND METHODS

Pediatric journals were considered those classified in the pediatrics area of the Journal Citation Report (JCR) Edition SCIE. This source includes journals indexed in the Clarivate Analytics' SCIE database, which is, along with Medline/PubMed, one of the most consulted sources in biomedicine. In 2018, the last year published when this analysis was performed, JCR included 125 pediatric journals.

The official pages or websites of each pediatric journal were consulted for the compilation of the ECs and EBMs. On these websites, the entries under the names "Editorial Board" and "Editorial Committee" were consulted first. Since the terminology of the names of the members of the Editorial Boards is quite varied, in case the members were not found with the previous names, other similar entries were accessed, such as "Editorial Executive Board," "International Editorial Board," "Editorial Board Members," or "Editorial Advisory Board," among others. When there were no entries, lists of editors included in other entries such as "Editors" or "Specialty Editors" prevailed. When none of the above names appeared, the listings specified as "Associate Editors" were used. If these terms were not found, the "Assistant Editors" were retrieved. Supplementary Table 1 describes the sections with members included and excluded in each of the 125 journals analyzed. For example, in the Journal of Adolescent Health, all members included in the "Editorial Board" section were recorded, but the Associate Editors, Managing Editor, Editorial Analyst, Supplements Editor, and the Intersection Committee were not considered. The committees of five journals could not be analyzed because this information was not available on their websites: *Clinics in Perinatology*, *Journal of Clinical Pediatric Dentistry*, *Pediatric Clinics of North America*, *Pediatric Dentistry*, and *Seminars in Pediatric Surgery*.

The next step was to develop a Microsoft Excel data matrix in which the following variables were entered: journal name, country of publication, publisher, journal quartile in JCR, genre of the journal, country of the journal, and thematic areas or specialties of the journals. Classification by pediatric specialties was performed by a pediatric specialist who, based on the title and the

information provided in the web page of the journal, assigned the specialties according to the specific pediatric training areas of The Spanish Association of Pediatrics ([https://www.aeped.es/sites/default/files/20181009\\_diap\\_sociedadasespecialidad.pdf](https://www.aeped.es/sites/default/files/20181009_diap_sociedadasespecialidad.pdf)). Ultimately, 31 different specialties were assigned.

The official names of the publishers were standardized based on the information provided by the JCR. Through this process, publishers acquired by a publishing group were integrated into a single entity, and entities belonging to the same publisher but based in different countries were grouped together. For example, according to these criteria, 25 journals from 8 entities (Elsevier France, Elsevier Ireland, Elsevier Taiwan, Elsevier SCI LTD, Elsevier Science Inc., Mosby-Elsevier, Doyma, and WB Saunders CO-Elsevier INC) were included in the Elsevier Publishing Group.

A triple methodology was used for assignment of the gender of ECs and EBMs. On the one hand, gender was manually attributed to the most well-known first names because they are easily classified, such as the masculine ones (Peter, Alfred, James, Williams, Antonio, and Oliver) and the feminine ones (Emma, Olivia, Sophia, Isabella, and Emily). On the other hand, to assign sex to the unclassified ECs and EBMs with the previous procedure, the statistical package GenderizeR was used (<https://genderize.io>), which provides a probability of male or female gender based on a frequently updated database that currently includes >200,000 distinct first names from >79 countries and languages. Finally, authors who could not be classified using the two procedures described above were searched directly on the Internet by identifying images. To do this, with the data available (name, surname, and institutional affiliation), an exhaustive search was performed primarily on the author's affiliation website or on the academic social network ResearchGate (<https://www.researchgate.net/>), as it collects photos in many cases), Google Images, or any other website that guaranteed the reliability of the search.

The total number of editorial members was 4320, with gender being identified with the three procedures for 4242 (98.19%) members. Therefore, gender could not be assigned to 78 (1.81%) editorial members, of which 68 belonged to the journal *Minerva Pediatrica*.

The following indicators were calculated from the data collected: gender distribution of ECs and EBMs by journal, publisher, subject area in pediatrics, country, quartile of the journal in JCR, and country of affiliation of its members. Additionally, data on members' countries of affiliation were grouped into three major blocks: United States, European Union, and rest of the world (RW). For the grouping of European Union countries, the 27 countries that make up the Union plus the United Kingdom and the member countries of the Schengen area without borders (Islands, Norway and Switzerland) were taken into account. Although the United Kingdom left the European Union on 31 January 2020, for the time being, it remains a full member, with all corresponding rights and obligations ([https://europa.eu/european-union/about-eu/countries\\_en](https://europa.eu/european-union/about-eu/countries_en)).

## RESULTS

### General data

Table 1 provides general data of the study. As mentioned above, the number of journals included in the pediatrics section of the 2018 edition of the JCR Science Edition was 125, but only 120 could be analyzed, since 5 journals did not provide information on their websites about EBMs.

The total number of ECs of the 120 journals was 144, as some journals have >1 EC (15 journals have two ECs and 2 journals have 3 ECs). The total number of EBMs was 4242, and the average was 35 EBMs per journal. There was a wide dispersion in the number of members, since 3 journals had only 2 and 4 EBMs, while another 3 had >100 members.

**Table 1.** Summary of the general data.

Data	n	Percentage
Total number of journals in JCR 2018 SCIE Edition	125	100
Total number of journals excluding journals with no data	120	96
Total number of EC plus EBM	4320	100
Total number of EC	144	100
Female EC	28	19.44
Male EC	116	80.56
Total number of EBM	4242	
Female EBM	1402	33.05
Male EBM	2840	66.95
Number of EBM with no identified gender	78	1.8
Number of publishers	35	100
Number of journals with more than one EC	17	
Number of countries of editorial members	87	100

EC Editors-in-Chief, EBM Editorial Board Members.

The distribution by sex of the ECs in the 120 journals was 28 women (19.44%) and 116 men (80.56%), while the distribution by sex of the EBMs was 1402 women (33.05%) and 2840 men (66.95%).

#### Gender by journals

Table 2 shows the number and percentage of males and females per journal of ECs and EBMs. In the case of EBMs, 5 journals contained >100 members: *Childrens Orthopaedics* (175), *BMC Pediatrics* (158), *World Journal of Pediatrics* (111), *Pediatric Cardiology* (102), and *Pediatric Nephrology* (102). With regard to distribution by sex, only 20 journals (16.6% of the journals) exhibited greater representation of women than of men, and in 4 there was parity (50% of the members are women and 50% are men). The 5 journals with the greatest participation of women were the *Journal of Perinatal and Neonatal Nursing* (94% of women), *Journal of Pediatric Nursing-Nursing Care of Children and Families* (93.3%), *Pediatric Physical Therapy* (91.7%), *Physical & Occupational Therapy in Pediatrics* (84.72%), and *Journal for Specialists in Pediatric Nursing* (84.62%). Journals with no women on their committee included the *Iranian Journal of Pediatrics*, *European Journal of Pediatric Surgery* and *Seminars in Pediatric Neurology*, although it should be noted that these journals have only 8, 4, and 4 committee members, respectively. Together with those 3, another 8 journals had a percentage of women <10%, and 47 journals (39.2% of the journals) had <25% women.

Regarding the distribution by sex of the ECs, in 19 journals, the only EC was female (15.83% of the journals), and in 8 journals, the position of EC was shared with a male (6.67%). Two of the three ECs of the journal *Neuropediatrics* were women.

#### Gender by pediatric specialty of journals

The specialty that included the most journals is what we labeled as "General" (37 journals), followed by Pediatric Neurology (11) and 2 with 10 journals, Pediatric Endocrinology and Nutrition and Neonatology (Table 3). Thirteen specialties only included one journal. Pediatric specialties with a percentage of women in their EBMs exceeding 50% were as follows: Pediatric Nursing (92.31%), Pediatric Physical Therapy (75%), Pediatric Dermatology (68%), Pediatric Gynecology (65.52%), Adolescence (51.06%), and Pediatric Endocrinology and Nutrition (50.76%). Fifteen specialties had a percentage of women between 25 and 50%. Those with a smaller female presence (<20%) were as follows: Pediatric Traumatology

and Orthopedics (10.85%), Pediatric Urology (11.11%), Pediatric Genetics and Dysmorphology (16.67%), Pediatric Gastroenterology (16.67%), and Pediatric Surgery (17.39%).

In relation to EC, in three specialties (one with three journals and two with one journal), the EC was female: Pediatric Nursing, Adolescence, and Pediatric Gynecology. In Pediatric Physiotherapy, with 4 journals, 75% of ECs were women. In two other specialties with two journals each, there was parity (the EC in one journal was female and in the other was male): Pediatric Dermatology and Pediatric Nephrology.

#### Gender by country of EBMs and ECs of pediatric journals

Identified EBMs belonged to 87 different countries. The country with the largest representation was the United States (1803; 42.5%) followed by the United Kingdom (315; 7.43%), Canada (208; 4.9%), and Germany (184; 4.34%) (Table 4).

Female participation was 100% in 7 countries, but it should be noted that these are countries with only one participating member. This was the case for Bulgaria, Indonesia, Jamaica, Latvia, Mongolia, Romania, and Ukraine. On the other hand, there were 24 countries where women had not participated in the committees, but these were countries where male representation was also very low (1, 2, or 3 male members).

If we establish a threshold of at least 10 participants, men or women, the highest percentages of women correspond to South Africa (46.43%), Turkey (44%), Australia (43.71%), Norway (41.18%), Canada (40.87%), New Zealand (39.29%), Denmark (38.46%), and United States (38.31). Figure 1 shows the distribution by country of the percentages of participation of women and men by country (17 countries with >50 members).

Comparative data on the presence of members in the three major world blocks, namely, the United States, the European Union, and the RW, show that, of the total membership (4240), the United States contributes 1803 (42.48%), the European Union 1227 (28.93%), and the RW 1212 (28.57). In relation to gender, the number and percentage of women from the United States was 691 (38.33%), from the European Union 341 (27.79%), and from the RW 370 (30.53) (Fig. 2).

Next, we examined the geographical origin of EBMs according to the country of edition of the magazine. Sixty-two percent of EBM members of journals published in the United States were American, while approximately 19% belonged to the European Union and another 19% to the RW (Table 5). This was not the case for journals published in the European Union, where 45.6% of EBMs were European, 26.4% were American, and 28% belonged to the RW. Of the 1227 EBMs in the EU, 63.57% were involved in journals published in the EU, 32.84% were involved in journals published in the US, and 3.59% were involved in journals published in RW. Of the 1212 EBMs in the US, 71.38% participate in journals published in the US, 25.07% participated in journals published in the EU, and 3.55% participated in journals published in RW. The percentage of European women EBMs in European and US journals was similar (28%). The percentage of US female EBMs in US journals was 57.9%, while in European journals, it was 30.3%.

Table 6 shows a comparison of participation according to the country of publication of the journals. It can be seen that 100% of EBMs of the only French magazine were European, as well as 88.64% of the only Spanish magazine and 84.62% of the two Italian magazines. Another country with a high percentage of European EBMs in its magazines was New Zealand (43.24). In contrast, only 22.58% of EBMs of the 4 magazines from Switzerland were European, highlighting here that 51.08% of their EBMs were American, so this country has the highest percentage of American EBMs after the USA (61.96%), followed by the Netherlands, with 45.38% American EBMs, Iran (37.5%), New Zealand (32.43%), and Brazil (32.14%).

Identified ECs belonged to 26 different countries. With respect to gender, only France had a woman as the only EC. Five countries

**Table 2.** Number and percentage of females and males per journal (EC plus EBM) (sorted by total number of EBM).

Full journal title	Editorial Board Members (EBM)					Editors-in-Chief (EC)		
	Women	% women	Men	% men	Total	Women	Men	Total
Journal of Childrens Orthopaedics	19	10.86	156	89.14	175	2	2	
BMC Pediatrics	58	36.71	100	63.29	158	1	1	
World Journal of Pediatrics	21	18.92	90	81.08	111	1	1	
Pediatric Cardiology	22	21.57	80	78.43	102	1	1	
Pediatric Nephrology	22	21.57	80	78.43	102	1	2	
Journal of Child Neurology	45	45.92	53	54.08	98	1	1	
Pediatric Radiology	35	37.63	58	62.37	93	2	2	
Pediatric Blood & Cancer	29	35.37	53	64.63	82	1	1	
Pediatric Neurology	24	29.27	58	70.73	82	1	1	
International Journal of Pediatric Otorhinolaryngology	19	25.00	57	75.00	76	1	1	
Pediatric Pulmonology	22	28.95	54	71.05	76	1	1	
Physical & Occupational Therapy in Pediatrics	61	84.72	11	15.28	72	1	2	
Pediatric Transplantation	16	22.54	55	77.46	71	1	2	
European Journal of Paediatric Neurology	28	45.16	34	54.84	62	1	1	
Pediatric Research	23	37.10	39	62.90	62	1	1	
Pediatric Rheumatology	26	44.07	33	55.93	59	2	2	
Cardiology in the Young	12	21.43	44	78.57	56	1	1	
Pediatric Critical Care Medicine	12	21.82	43	78.18	55	1	1	
European Child & Adolescent Psychiatry	14	25.93	40	74.07	54	1	1	
Journal of Perinatal & Neonatal Nursing	47	94.00	3	6.00	50	1	1	
Pediatric Dermatology	34	68.00	16	32.00	50	1	2	
Journal of Developmental and Behavioral Pediatrics	19	39.58	29	60.42	48	1	1	
Journal of Adolescent Health	24	51.06	23	48.94	47	1	1	
Journal of Pediatric Urology	5	11.11	40	88.89	45	1	1	
Neonatology	6	13.33	39	86.67	45	2	2	
Anales de Pediatria	14	31.82	30	68.18	44	1	1	
Journal of Paediatrics and Child Health	15	34.09	29	65.91	44	1	1	
Birth-issues in Perinatal care	26	61.90	16	38.10	42	1	1	
Journal of Pediatric Orthopaedics-part B	2	4.76	40	95.24	42	1	1	
Journal of the Pediatric Infectious Diseases Society	17	40.48	25	59.52	42	1	1	
Pediatric and Developmental Pathology	21	50.00	21	50.00	42	1	1	
Journal of Pediatric Orthopaedics	7	17.07	34	82.93	41	1	1	
Childs Nervous System	3	7.69	36	92.31	39	1	1	
Developmental Neurorehabilitation	17	43.59	22	56.41	39	1	1	
Journal of Child Health Care	26	68.42	12	31.58	38	1	1	
Pediatric Allergy and Immunology	10	26.32	28	73.68	38	1	1	
Hormone Research in Paediatrics	15	40.54	22	59.46	37	1	1	
Journal of Pediatric Infectious Diseases	8	21.62	29	78.38	37	1	1	
Pediatric Drugs	10	27.03	27	72.97	37	1	1	
Pediatric Infectious Disease Journal	8	21.62	29	78.38	37	1	1	
Childhood Obesity	20	55.56	16	44.44	36	1	1	
Congenital Anomalies	6	16.67	30	83.33	36	1	1	
Journal of Child and Adolescent Psychopharmacology	7	19.44	29	80.56	36	1	1	
Journal of Pediatrics	11	30.56	25	69.44	36	1	1	
Journal of Perinatology	8	22.22	28	77.78	36	1	1	
Turkish Journal of Pediatrics	17	48.57	18	51.43	35	1	1	
International Breastfeeding Journal	23	67.65	11	32.35	34	1	1	
Pediatric Emergency Care	7	20.59	27	79.41	34	2	2	
Child and Adolescent Psychiatry and Mental Health	11	33.33	22	66.67	33	1	1	
Journal of Pediatric Hematology Oncology	9	27.27	24	72.73	33	1	1	
Pediatric Diabetes	10	30.30	23	69.70	33	1	1	

**Table 2.** continued

Full journal title	Editorial Board Members (EBM)					Editors-in-Chief (EC)		
	Women	% women	Men	% men	Total	Women	Men	Total
Pediatrics International	1	3.03	32	96.97	33	1	1	
Child and Adolescent Mental health	14	43.75	18	56.25	32	1	1	
Pediatric Allergy Immunology and Pulmonology	10	31.25	22	68.75	32	1		1
Italian Journal of Pediatrics	2	6.45	29	93.55	31	1	1	
Journal of Pediatric Ophthalmology & Strabismus	11	35.48	20	64.52	31	2	2	
Acta Paediatrica	5	16.67	25	83.33	30	1	1	
Child Care Health and Development	15	51.72	14	48.28	29	1	1	
Early Human Development	7	24.14	22	75.86	29	1	1	
Journal of Pediatric and Adolescent Gynecology	19	65.52	10	34.48	29	1		1
Maternal and Child Nutrition	21	72.41	8	27.59	29	1	1	2
Pediatric Anesthesia	9	31.03	20	68.97	29	1	1	
Jornal De Pediatria	3	10.71	25	89.29	28	1	1	
Journal of Pediatric Surgery	2	7.14	26	92.86	28	1	1	
Academic Pediatrics	15	55.56	12	44.44	27	1	1	
Monatsschrift Kinderheilkunde	4	14.81	23	85.19	27	1	2	3
Pediatrics	13	48.15	14	51.85	27	1	1	
Breastfeeding Medicine	13	50.00	13	50.00	26	1	1	
Developmental Medicine and Child Neurology	8	30.77	18	69.23	26	1	1	
Paediatrics and International Child Health	4	15.38	22	84.62	26	1	1	
Journal of Perinatal Medicine	4	16.00	21	84.00	25	1	1	
JOURNAL of the American Academy of Child and Adolescent Psychiatry	9	36.00	16	64.00	25	1	1	
Zeitschrift fur Geburtshilfe und Neonatologie	6	25.00	18	75.00	24	1	1	
Fetal and Pediatric Pathology	7	30.43	16	69.57	23	1	1	
Journal of Aapos	11	47.83	12	52.17	23	1	1	
Paediatric and Perinatal Epidemiology	13	56.52	10	43.48	23	1	1	
Archives of Disease in Childhood	9	40.91	13	59.09	22	1	1	
Frontiers in Pediatrics	8	36.36	14	63.64	22	1	1	
Pediatrics and Neonatology	3	13.64	19	86.36	22	1	1	
Current Opinion in Pediatrics	2	9.52	19	90.48	21	1		1
Journal of Human Lactation	16	76.19	5	23.81	21	1	1	
Pediatric Annals	8	38.10	13	61.90	21	1	1	
Pediatric Hematology and Oncology	4	19.05	17	80.95	21	2	2	
Seminars in Fetal & Neonatal Medicine	5	23.81	16	76.19	21	1	1	
Clinical Pediatrics	3	15.00	17	85.00	20	1	1	
European Journal of Pediatrics	5	25.00	15	75.00	20	1	1	
Pediatric Exercise Science	6	30.00	14	70.00	20	1		1
Pediatric Neurosurgery	1	5.00	19	95.00	20	1	1	
Neuropediatrics	4	21.05	15	78.95	19	2	1	3
Paediatrics & Child Health	9	47.37	10	52.63	19	1	1	
Archivos Argentinos De Pediatria	4	22.22	14	77.78	18	1	1	
International Journal of Paediatric Dentistry	8	44.44	10	55.56	18	1		1
Journal of Clinical Research in Pediatric Endocrinology	6	33.33	12	66.67	18	1		1
Journal of Pediatric Gastroenterology and Nutrition	3	16.67	15	83.33	18	2	2	
Journal of Neurosurgery-Pediatrics	4	23.53	13	76.47	17	1	1	
Pediatric Obesity	6	35.29	11	64.71	17	1	1	
Archives of Disease in Childhood-Education and Practice Edition	9	56.25	7	43.75	16	1	1	
Hong Kong Journal of Paediatrics	2	13.33	13	86.67	15	1	1	
Indian Pediatrics	3	20.00	12	80.00	15	1	1	
Journal of Pediatric Nursing-Nursing Care of Children & Families	14	93.33	1	6.67	15	1		1
Klinische Padiatrie	1	6.67	14	93.33	15	1	1	
Indian Journal of Pediatrics	2	14.29	12	85.71	14	1	1	
Jama Pediatrics	7	50.00	7	50.00	14	1	1	

**Table 2.** continued

Full journal title	Editorial Board Members (EBM)					Editors-in-Chief (EC)		
	Women	% women	Men	% men	Total	Women	Men	Total
American Journal of Perinatology	2	15.38	11	84.62	13	1	1	2
Journal for Specialists in Pediatric Nursing	11	84.62	2	15.38	13	1		1
Journal of Pediatric Endocrinology & Metabolism	4	30.77	9	69.23	13	1		1
Pediatric Physical Therapy	11	91.67	1	8.33	12	1		1
Pediatric Surgery International	2	16.67	10	83.33	12		2	2
Archives of Disease in Childhood-Fetal and Neonatal Edition	3	27.27	8	72.73	11		1	1
Archives De Pediatrie	3	30.00	7	70.00	10	1		1
Current Problems in Pediatric and Adolescent Health care	2	25.00	6	75.00	8		1	1
Iranian Journal of Pediatrics		0.00	8	100.00	8		1	1
Minerva Pediatrica	1	12.50	7	87.50	8		1	1
Journal of Pediatric Health care	5	83.33	1	16.67	6	1		1
Journal of Tropical Pediatrics	4	66.67	2	33.33	6		1	1
European Journal of Paediatric Dentistry	2	40.00	3	60.00	5		1	1
European Journal of Pediatric Surgery		0.00	4	100.00	4		1	1
Paediatric Respiratory Reviews	2	50.00	2	50.00	4		1	1
Seminars in Pediatric Neurology		0.00	4	100.00	4		1	1
Seminars in Perinatology	1		1		2		1	1
Total	1402	33.05	2840	66.95	4242	27	112	139

achieve parity, as 50% of EC were women: Austria, Brazil, Canada, Netherlands, and Turkey. In Germany, the percentage of female ECs was 15.38%, in the United Kingdom it was 20%, and in the United States it was 22.54%.

#### Gender by publishers of pediatric journals

The 120 journals were published by 33 different publishers (Table 7). The publishers with the largest number of pediatric journals were Elsevier,<sup>19</sup> Wiley,<sup>20</sup> Lippincott Williams & Wilkins,<sup>11</sup> and Springer.<sup>10</sup> More than half of the publishers<sup>18</sup> published only one journal.

The percentage of women among EBMs was also variable depending on the publishers. Five publishers had a percentage of women close to 50%: Taylor & Francis Inc. (51.4%), Sage Publications Inc. (50.7%), American Medical Association (50%), Turkish Journal of Pediatrics (48.6%), and American Academics of Pediatrics (48.2%). At the opposite pole was Kowsar Corp. (0%). In 13 publishers (39.4%), the percentage of women was <25%.

The percentage of women among ECs was also variable depending on the publisher. The publishers with the largest number of journals had the following percentages of women: Wiley 26.1%; Lippincott Williams & Wilkins (23.1%); Elsevier 22.7%, and Springer 13.3%.

#### Gender by quartile of pediatric journals in JCR

The percentages of male and female participation were very similar per quartile of journals in JCR. There were more women in quartile 2 journals (414) compared to 237 in Q4, although the number of committee members may be higher in these Q2 journals. For the percentages of women as ECs according to the quartile of the journals, no important differences were observed. The percentage of women ECs in Q1 journals (13.98%) was lower than in other quartiles: the highest percentage of women was in Q3 journals (25.64%), followed by Q4 (18.92%) and Q2 (18.75%) (Fig. 3).

## DISCUSSION

### Women as authors in medical journals

Differences in the presence of men and women as authors of scientific papers or in the highest academic positions have been analyzed in several biomedical specialties, including gastroenterology,<sup>21</sup> gynecological oncology,<sup>20</sup> nuclear medicine and radiology,<sup>19,22</sup> urology,<sup>23</sup> physical medicine and rehabilitation,<sup>24</sup> orthopedic surgery,<sup>4</sup> and emergency medicine.<sup>25</sup> All these studies confirmed that women's research productivity was significantly lower than that of their male colleagues and that women were less frequently represented in higher academic ranks. Some studies further concluded that women's research receives less funding and is less likely to be published in peer-reviewed journals.<sup>25</sup> In the same direction, according to the Association of American Medical Colleges' 2014 report "The Status of Women in Academic Medicine," only 15% of department heads and 16% of deans of health science faculties were women.<sup>26</sup> Although these figures are increasing, their pace is slow and does not allow the objective attainment of full parity in the coming years to be met.<sup>27</sup>

### Women in medical journal editorial committees

Previous studies have reported on the presence of women on editorial boards of biomedical journals. In general, women are underrepresented on these committees, although there was great variability among the journals in the specialties analyzed. As shown in Table 8, the percentages of women's participation as EBMs varied greatly according to the year of the study and the specialty. The lowest percentage (1.6%) was reported by Okike et al. in 1970 in Orthopedics, a specialty in which it had risen to 5.4% in 2007<sup>28</sup> and 9% in 2019.<sup>4</sup> This was followed in percentage by Anesthesiology (11%),<sup>29</sup> although higher percentages of 15% have been reported in this specialty<sup>30</sup> and Emergency medicine (13.2%).<sup>31</sup> Among the highest were 41.7% found in *JAMA Internal Medicine*,<sup>32</sup> 25% in Clinical specialties,<sup>33</sup> and 22.2% in *New England Journal of Medicine*.<sup>32</sup>

**Table 3.** Number and percentage of females and males per pediatric speciality.

Pediatric speciality	Editorial Board Members (EBM)							Editors-in-Chief (EC)		
	Number of journals	Number of women	% women	Number of men	% men	Total	Average number of members per speciality	Women	Men	Total
Pediatric Nursing	3	72	92.31	6	7.69	78	26.0	3		3
Pediatric Physical Therapy	3	78	75.00	26	25.00	104	34.7	3	1	4
Pediatric Dermatology	1	34	68.00	16	32.00	50	50.0	1	1	2
Pediatric Gynecology	1	19	65.52	10	34.48	29	29.0	1		1
Adolescence	1	24	51.06	23	48.94	47	47.0	1		1
Pediatric Endocrinology and Nutrition	10	134	50.76	130	49.24	264	26.4	4	7	11
Pediatric Rheumatology	1	26	44.07	33	55.93	59	59.0		2	2
Pediatric Dentistry	2	10	43.48	13	56.52	23	11.5	1	1	2
Pediatric Ophthalmology	2	22	40.74	32	59.26	54	27.0		3	3
Pediatric Radiology	1	35	37.63	58	62.37	93	93.0		2	2
Pediatric Neurology	11	147	35.59	266	64.41	413	37.5	3	10	13
Pediatric Psychiatry	4	48	33.33	96	66.67	144	36.0		4	4
Pediatric Anesthesiology	1	9	31.03	20	68.97	29	29.0		1	1
Pediatric Oncology and Hematology	3	42	30.88	94	69.12	136	45.3		4	4
General	37	343	30.79	771	69.21	1114	30.1	6	33	39
Pediatric Allergy and Pneumology	3	34	30.36	78	69.64	112	37.3	1	2	3
Pediatric Infectology	4	37	30.33	85	69.67	122	30.5		4	4
Neonatology	11	77	29.17	187	70.83	264	24.0	2	11	13
Pediatric Neurosurgery	2	28	28.28	71	71.72	99	49.5		2	2
Pediatric Allergy	1	10	26.32	28	73.68	38	38.0		1	1
Pediatric Otolaryngology	1	19	25.00	57	75.00	76	76.0		1	1
Pediatric Pharmacology	2	17	23.29	56	76.71	73	36.5		2	2
Pediatric Intensive Care	1	12	21.82	43	78.18	55	55.0		1	1
Pediatric Nephrology	1	22	21.57	80	78.43	102	102.0	1	1	2
Pediatric Cardiology	2	34	21.52	124	78.48	158	79.0		2	2
Pediatric Emergencies	1	7	20.59	27	79.41	34	34.0		2	2
Pediatric Surgery	4	20	17.39	95	82.61	115	28.8	1	5	6
Pediatric Gastroenterology	1	3	16.67	15	83.33	18	18.0		2	2
Genetics and Pediatric Dysmorphology	1	6	16.67	30	83.33	36	36.0		1	1
Pediatric Urology	1	5	11.11	40	88.89	45	45.0		1	1
Pediatric Traumatology and Orthopedics	3	28	10.85	230	89.15	258	86.0		4	4
Total	120	1402	33.05	2840	66.95	4242	35.4	28	111	139

Low representation on editorial committees or as ECs occurs even in specialties where the proportion of women is higher than men.<sup>2</sup> In some specialties, such as radiology, it lags behind the increases observed in first female authorships, as well as in radiology professor appointments during the past four decades.<sup>34</sup> Female representation on the editorial boards of medical journals does not reflect the gender composition in the corresponding specialties.<sup>25</sup>

**Women as authors in pediatrics**

In pediatrics, few studies have been conducted analyzing the presence of women as authors of papers and in positions of responsibility and leadership, but their results report that the situation is similar to that exposed in other medical specialties. Thus a previous study analyzing the gender of the authors of three high-impact pediatric-focused journals between 2001 and 2016

(*Pediatrics*, *JAMA Pediatrics*, and *The Journal of Pediatrics*) reported an increase in female representation as first authors in the selected journals (57.7% in 2016 versus 39.8% in 2001).<sup>35</sup> Another paper examining the number of women elected or appointed to the boards of several pediatric organizations concluded that their numbers were low, although they had increased by 30% from 2017 to 2019, compared to 2014–2016.<sup>36</sup> A study investigating possible gender bias in reviewer recommendations and pediatric journal editorial decisions found no differences based on the gender of the author of the reviewed papers. However, women had fewer opportunities to serve as peer reviewers and editorial writers than would be expected given the number of female pediatricians.<sup>37,38</sup>

In addition, no studies been conducted to analyze the representation of women as EBMs in pediatric journals. In the same study mentioned previously,<sup>35</sup> low representation of women

**Table 4.** Number and percentage females and males per country of EC and EBM.

Countries	Editorial Board Members (EBM)						Editors-in-Chief (EC)		
	Number of women	% women	Number of men	% men	Total	% Total	Women	Men	Total
Argentina	6	19.35	25	80.65	31	0.73		1	1
Armenia		0.00	1	100.00	1	0.02			
Australia	73	43.71	94	56.29	167	3.94	1	2	3
Austria	3	13.04	20	86.96	23	0.54	1	1	2
Azerbaijan		0.00	1	100.00	1	0.02			
Bangladesh		0.00	1	100.00	1	0.02			
Belgium	9	28.13	23	71.88	32	0.75		2	2
Botswana		0.00	1	100.00	1	0.02			
Brazil	21	35.59	38	64.41	59	1.39	1	1	2
Bulgaria	1	100.00		0.00	1	0.02			
Canada	85	40.87	123	59.13	208	4.90	2	2	4
Chile	5	31.25	11	68.75	16	0.38			
China	21	20.59	81	79.41	102	2.40		1	1
Croatia	1	25.00	3	75.00	4	0.09			
Cyprus		0.00	1	100.00	1	0.02			
Czech Republic	1	14.29	6	85.71	7	0.17			
Denmark	5	38.46	8	61.54	13	0.31			
East Timor		0.00	1	100.00	1	0.02			
Ecuador		0.00	1	100.00	1	0.02			
Egypt	2	20.00	8	80.00	10	0.24			
Estonia		0.00	1	100.00	1	0.02			
Ethiopia		0.00	2	100.00	2	0.05			
Finland	5	20.00	20	80.00	25	0.59			
France	24	25.26	71	74.74	95	2.24	1		1
Georgia		0.00	2	100.00	2	0.05			
Germany	33	17.93	151	82.07	184	4.34	2	11	13
Ghana		0.00	1	100.00	1	0.02			
Greece	5	25.00	15	75.00	20	0.47			
Hong Kong	7	23.33	23	76.67	30	0.71		1	1
Hungary	2	25.00	6	75.00	8	0.19			
Iceland		0.00	1	100.00	1	0.02			
India	25	34.25	48	65.75	73	1.72		3	3
Indonesia	1	100.00		0.00	1	0.02			
Iran	1	12.50	7	87.50	8	0.19		1	1
Ireland	3	20.00	12	80.00	15	0.35		1	1
Israel	11	18.64	48	81.36	59	1.39		2	2
Italy	34	25.76	98	74.24	132	3.11		5	5
Jamaica	1	100.00		0.00	1	0.02			
Japan	11	8.27	122	91.73	133	3.14		2	2
Jordan	1	33.33	2	66.67	3	0.07			
Kenya	3	75.00	1	25.00	4	0.09			
Kuwait	1	25.00	3	75.00	4	0.09			
Latvia	1	100.00		0.00	1	0.02			
Lebanon	1	33.33	2	66.67	3	0.07			
Libya		0.00	1	100.00	1	0.02			
Lithuania	2	66.67	1	33.33	3	0.07			
Malawi	1	50.00	1	50.00	2	0.05			
Malaysia	1	33.33	2	66.67	3	0.07			
Mexico	1	14.29	6	85.71	7	0.17			
Mongolia	1	100.00		0.00	1	0.02			
Mozambique								1	1



**Table 4.** continued

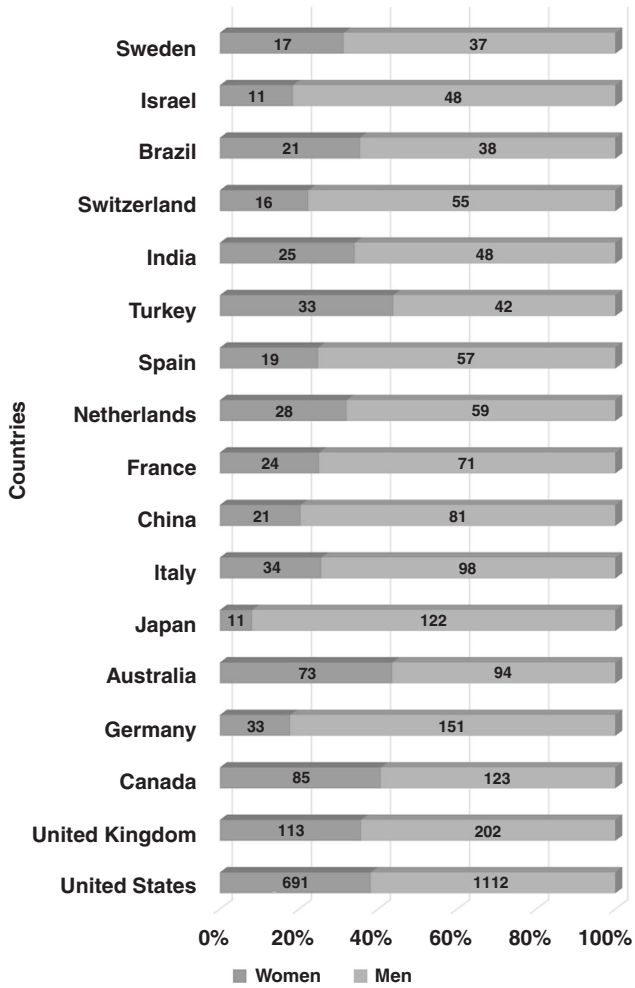
Countries	Editorial Board Members (EBM)						Editors-in-Chief (EC)		
	Number of women	% women	Number of men	% men	Total	% Total	Women	Men	Total
Nepal		0.00	1	100.00	1	0.02			
Netherlands	28	32.18	59	67.82	87	2.05	1	1	2
New Zealand	11	39.29	17	60.71	28	0.66		2	2
Nigeria	3	30.00	7	70.00	10	0.24			
Norway	7	41.18	10	58.82	17	0.40			
Pakistan	1	25.00	3	75.00	4	0.09			
Palestine		0.00	1	100.00	1	0.02			
Peru		0.00	2	100.00	2	0.05			
Philippines		0.00	2	100.00	2	0.05			
Poland	6	26.09	17	73.91	23	0.54			
Portugal	3	27.27	8	72.73	11	0.26			
Qatar		0.00	6	100.00	6	0.14			
Romania	1	100.00		0.00	1	0.02			
Russia	3	50.00	3	50.00	6	0.14			
Rwanda		0.00	1	100.00	1	0.02			
Saudi Arabia	1	10.00	9	90.00	10	0.24			
Serbia	1	33.33	2	66.67	3	0.07			
Singapore	4	23.53	13	76.47	17	0.40			
Slovakia		0.00	1	100.00	1	0.02			
Slovenia	2	33.33	4	66.67	6	0.14			
South Africa	13	46.43	15	53.57	28	0.66			
South Korea	5	21.74	18	78.26	23	0.54			
Spain	19	25.00	57	75.00	76	1.79		1	1
Sweden	17	31.48	37	68.52	54	1.27		4	4
Switzerland	16	22.54	55	77.46	71	1.67		3	3
Taiwan	6	15.00	34	85.00	40	0.94		1	1
Thailand	6	75.00	2	25.00	8	0.19			
Trinidad and Tobago		0.00	1	100.00	1	0.02			
Turkey	33	44.00	42	56.00	75	1.77	1	1	2
Uganda	1	50.00	1	50.00	2	0.05			
Ukraine	1	100.00		0.00	1	0.02			
United Arab Emirates	1	50.00	1	50.00	2	0.05			
United Kingdom	113	35.87	202	64.13	315	7.43	2	10	12
United States	691	38.33	1,112	61.67	1803	42.50	15	52	67
Uruguay		0.00	1	100.00	1	0.02			
Venezuela		0.00	1	100.00	1	0.02			
Zimbabwe		0.00	1	100.00	1	0.02			
<b>Total</b>	<b>1402</b>	<b>33.05</b>	<b>2840</b>	<b>66.95</b>	<b>4242</b>	<b>100.00</b>	<b>27</b>	<b>112</b>	<b>139</b>

among EBMs was documented, although the gap was closing, from 17.8% in 2001 to 39.8% in 2016. In our study, the overall percentage observed was 33.05% women, a percentage six points below that reported in previous work. These differences may be due to the large number of journals we analyzed, as well as their wide thematic variety and geographical diversity of origin, since they were classified across 31 specialties and published in 21 different countries. With respect to the position of EC, the percentages of women were still lower than in EBMs, since of the 144 ECs, only 19.44% were women, and only 19 journals had a woman as the sole EC, although in another 8 journals (6.67%) there was coexistence of a woman and man in the position of EC.

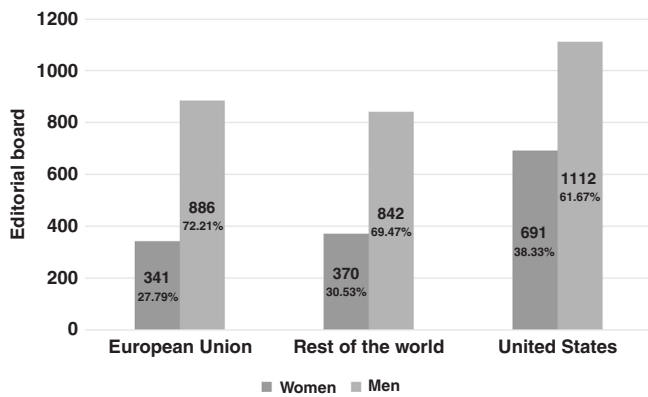
As we have seen, journals with greater participation of women were specialized in Nursing, Physical Therapy, and related to

nutrition (lactation and breastfeeding). These are specialties in which women have historically predominated, and therefore it is logical that they are more represented.

The percentage of female ECs in Q1 journals (13.98%) was lower than in other quartiles, which may be related to the lower impact factor that journals with higher female participation, such as Nursing and Physical Therapy, tend to have compared to other biomedical journals.<sup>39</sup> One of the reasons is that Nursing has traditionally been considered by many a psychosocial rather than a biological science and that in Europe many educational programs have remained outside of universities, resulting in some professionals having reduced research capacity. Finally, it is necessary to highlight that the impact factors of these journals should be compared to those of other Nursing journals and not



**Fig. 1 Participation of women and men per country.** Bars represent the number of women and men ECs and EBM in 17 countries with more than 50 members.



**Fig. 2 Participation of women and men by geographical areas.** The figure details the distribution of women and men ECs and EBMs in European Union, United States and Rest of the World.

with those of other disciplines with very high impact factors, such as generalist pediatric journals.<sup>40</sup>

Our results demonstrated a higher level of inbreeding in US journals, with US EMBs participating in US journals at a higher rate than European EMBs in European journals (71.38 versus 63.57%).

**Table 5. Gender by geographical areas of journals and geographic areas of EBM and EC.**

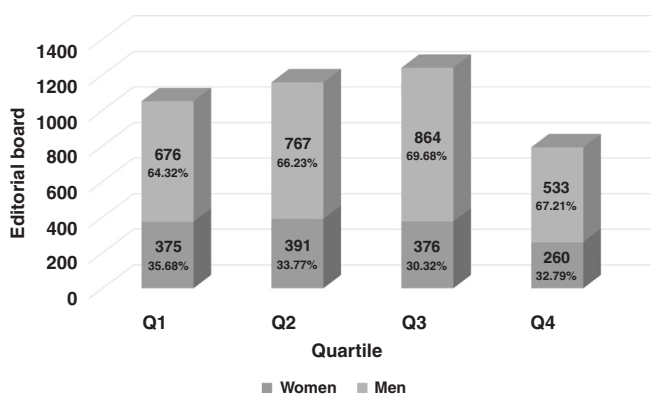
Geographical area of journals	Journals	Origin of journals		Geographical area of EBM and EC					
		% European Union Members	% Rest of the world members	% USA members	Total		% Regarding total USA committees		
					European Union	Rest of the world		United States	Total United States
European Union	49	45.56	28.04	26.40	1712	560	780	452	25.07
Rest of the world	15	9.71	76.16	14.13	453	82	263	64	3.55
United States	56	19.40	18.63	61.96	2077	133	254	1287	71.38
Total	120				4242	370	842	1803	100.00

**Table 6.** Gender according to countries of journals and geographic areas of EBM and EC.

Geographic area of journals	Country of journal edition	Journals	Number of women	Number of men	Total	Geographic area committees											
						European Union			Rest of the world			United States					
						Women	Men	W & M	Women	Men	W & M	Women	Men	W & M			
European Union	Denmark	4	33	86	119	17	45	62	52.10	11	27	38	31.93	5	14	19	15.97
	England	22	301	458	759	116	191	307	40.45	111	156	267	35.18	74	111	185	24.37
	France	1	3	7	10	3	7	10	100.00	—	—	0	0.00	—	—	—	—
	Germany	12	70	381	451	48	215	263	58.31	11	89	100	22.17	11	77	88	19.51
	Italy	2	3	10	13	3	8	11	84.62	—	—	—	—	—	2	2	15.38
	Netherlands	3	35	95	130	13	33	46	35.38	5	20	25	19.23	17	42	59	45.38
	Spain	1	14	30	44	11	28	39	88.64	1	—	1	2.27	2	2	4	9.09
	Switzerland	4	53	133	186	9	33	42	22.58	16	33	49	26.34	28	67	95	51.08
Rest of the world	Argentina	1	4	14	18	—	3	3	16.67	3	9	12	66.67	1	2	3	16.67
	Australia	1	15	29	44	—	—	—	—	14	29	43	97.73	1	—	1	2.27
	Brazil	1	3	25	28	—	7	7	25.00	2	10	12	42.86	1	8	9	32.14
	Canada	1	9	10	19	—	2	2	10.53	9	8	17	89.47	—	—	—	—
	China	1	21	90	111	1	7	8	7.21	18	63	81	72.97	2	20	22	19.82
	Hong Kong	1	2	13	15	—	—	—	—	2	13	15	100.00	—	—	—	—
	India	2	5	24	29	—	1	1	3.45	5	22	27	93.10	—	1	1	3.45
	Iran	1	1	8	8	—	2	2	25.00	—	3	3	37.50	—	3	3	37.50
	Japan	2	7	62	69	1	2	3	4.35	4	56	60	86.96	2	4	6	8.70
	New Zealand	1	10	27	37	6	10	16	43.24	1	8	9	24.32	3	9	12	32.43
	Taiwan	1	3	19	22	—	—	—	—	3	19	22	100.00	—	—	—	—
	Turkey	2	23	30	53	—	2	2	3.77	21	23	44	83.02	2	5	7	13.21
United States	USA	56	788	1289	2077	113	290	403	19.40	133	254	387	18.63	542	745	1287	61.96
Total		120	1402	2840	4242	341	886	1227	28.93	370	842	1212	28.57	691	1112	1803	42.50

**Table 7.** Number and percentage of females and males of EC and EBM per publisher.

Publisher	Editorial Board Members (EBM)					Editors-in-Chief (EC)			
	Number of journals	Women	% women	Men	% men	Total	Women	Men	Total
Adis int ltd	1	10	27.03	27	72.97	37		1	1
Amer Acad Pediatrics	1	13	48.15	14	51.85	27		1	1
Amer Assoc Neurological Surgeons	1	4	23.53	13	76.47	17		1	1
Amer Medical Assoc	1	7	50.00	7	50.00	14		1	1
Ariesdue SRL	1	2	40.00	3	60.00	5		1	1
BMC	5	120	38.10	195	61.90	315	1	5	6
BMJ Publishing Group	3	21	42.86	28	57.14	49		3	3
British Editorial Soc Bone Joint Surgery	1	19	10.86	156	89.14	175		2	2
Cambridge Univ Press	1	12	21.43	44	78.57	56		1	1
Edizioni Minerva Medica	1	1	12.50	7	87.50	8		1	1
Elsevier	22	200	34.31	383	65.69	583	5	17	22
Frontiers Media SA	1	8	36.36	14	63.64	22		1	1
Galenos Yayincilik	1	6	33.33	12	66.67	18	1		1
Georg Thieme Verlag KG	5	19	19.19	80	80.81	99	2	5	7
Human Kinetics Publ Inc	1	6	30.00	14	70.00	20	1		1
Karger	3	45	27.44	119	72.56	164		4	4
Kowsar Corp	1		0.00	8	100.00	8		1	1
Lippincott Williams & Wilkins	11	127	32.48	264	67.52	391	3	10	13
Mary Ann Liebert. Inc	4	50	38.46	80	61.54	130	1	3	4
Medcom LTD	1	2	13.33	13	86.67	15		1	1
Nature Publishing Group	2	31	31.63	67	68.37	98	1	1	2
Oxford Univ Press	3	30	44.78	37	55.22	67		3	3
Sage Publications Inc	5	111	50.68	108	49.32	219		5	5
Slack Inc	2	19	36.54	33	63.46	52		3	3
Soc Argentina Pediatria	1	4	22.22	14	77.78	18		1	1
Soc Brasil Pediatria	1	3	10.71	25	89.29	28		1	1
Springer	10	112	23.43	366	76.57	478	2	13	15
Taylor & Francis Inc	5	93	51.38	88	48.62	181	2	5	7
Thieme Medical Publ Inc	1	2	15.38	11	84.62	13	1	1	2
Turkish J Pediatrics	1	17	48.57	18	51.43	35		1	1
Walter De Gruyter Gmbh	2	8	21.05	30	78.95	38	1	1	2
Wiley	20	279	37.15	472	62.85	751	6	17	23
Zhejiang Univ Sch Medicine	1	21	18.92	90	81.08	111		1	1
Total	120	1402	33.05	2840	66.95	4242	27	112	139



**Fig. 3** Participation of women and men by quartile of journals. Columns represent the number and percentage of woman and men in each quartile (Q) of Journal Citation Reports.

**Final considerations**

The nomination to be part of an editorial board of a journal is an honor that allows you to advance in your professional career, since it conveys recognition as an expert in your specialty, allows you to develop relationships with other colleagues, facilitates formation of new professional networks, and a greater competence in obtaining resources.<sup>13,29</sup> Its achievement is based on several factors, including the candidate's academic rank, awards and recognition received, research experience, and the number of publications and their impact.<sup>29</sup> Of course, the most qualified people are sought to fill these positions, but this does not mean that they are appointed in an equitable manner.<sup>41</sup> For some authors, management positions should be filled by women in the same proportion as the number of female specialists, provided there are no other mitigating factors.<sup>42</sup>

The editors of scientific journals can play an important role in promoting the presence of women by inviting them to write editorial articles and participate as reviewers.<sup>25</sup> Participation as a

**Table 8.** Summary of women participation in several medical specialties and journals.

Paper	Year	Specialty	% of women	Other data
Wenger et al.	2008	General medicine	21.5	
		Clinical specialties	25	
		Biomedical sciences	14.5	
Miró et al.	2009	Emergency Medicine	13.2	Of 24 journals only 1 EC
Amrein et al.	2011	12 medical specialties	15.9	63 journals. No women as EC in 5
Okike et al.	2012	Orthopedics	From 1.6 in 1970 to 5.4 in 2007	
Erren et al.	2014		22.2 (NEJM) and 41.7 (JAMA Intern Med)	6 journals. 4 women EC and 3 men EC
Piper et al.	2018	Radiology	18.8 in 2013 but increasing from 1.4 in 1978	4 journals. No women as EC
Pagel et al.	2019	Journal of Cardiothoracic and Vascular Anesthesia	15.8	Increase of 8.0 from 1987
Ryneckie et al.	2019	Orthopedics	9	Increase of 3.0 from 1997. No women as EC
Kaji et al.	2019	60 journals of several specialties	18	16.0 of women as EC
Lorello et al.	2018	Anesthesiology	15	
Capdeville et al.	2019	Anesthesiology	11	5 journals
Balasubramanian et al.	2020	General journals and Cardiology	11.8 in European journals and 12.8 in American journals	

reviewer is a job that, if done with the appropriate seriousness and professionalism, can act as a springboard for women reviewers to enter the editorial committee and from there to the position of editor. Some journals have taken initiatives to promote parity. In the field of scientific journal publishing, *The Lancet* adopted the #LancetWomen initiative in 2019 with the aim of incorporating gender into its content and publishing practices.<sup>43</sup> In an editorial published in the journal, it is stated that "Gender equity is not only a question of justice and rights but is crucial to producing the best research and providing the best care for patients."<sup>43</sup> Their commitment to gender parity has resulted in equal representation in both EBMs and ECs.<sup>44</sup>

Medical and pediatric associations and societies must work together in a coordinated manner to adopt collaborative projects that will make the necessary improvements to eliminate the disparities that exist between women and men in the field of pediatrics.<sup>11</sup> As early as 2006, the National Academy of Sciences urged that there be reasonable representation of women on editorial boards.<sup>45</sup> Today, many organizations are working to achieve gender equity in academic and professional settings, such as the American Association of University Women, which has as its values "to promote gender equality for women and girls through research, education and advocacy."<sup>46</sup> The European Union and other institutions have issued guidelines or mandates calling for gender parity to be considered in scientific and other health-related activities, such as the design and analysis of medical research.<sup>47-49</sup> In addition, institutions such as the Medical Women's International Association promote many actions of interest to female doctors, such as work-life balance, maternity leave, career advancement, anti-discrimination, and mentoring of young doctors and medical students.<sup>50</sup> It is important to highlight the Women's Wellness through Equity and Leadership initiative of the American Academy of Pediatrics, which develops various activities focused on promoting equity-based work environments, such as training programs and leadership experience to encourage the development of the next wave of women medical leaders.<sup>51</sup>

#### Primary conclusions

In pediatrics journals, only one-fifth of ECs were female and only one-third of EBMs were female. Women's participation is higher in

journals related to nursing, physical and occupational therapy, dermatology, adolescence, and nutrition. The United States is the country with the highest number of EBMs, followed by the European Union.

#### Limitations

In our work, we examined the gender composition of editorial boards of pediatric journals based on the list of journals indexed in WoS/JCR, so journals not indexed in this database were excluded. However, these journals have been chosen because they are considered the most internationally prestigious journals in terms of impact factor, an indicator that cannot be obtained from other sources.

The limitations of this study include our inability to determine the proportion of women invited to the editorial committees who refused to accept, as well as the proportion of women active in academic medicine in each specialty, data that could partly explain some of the results obtained in our study. A more detailed analysis of the different roles of the editorial boards was not possible due to the diversity of positions and their inconsistent distribution among journals. Another limitation of our study is because not all participants were analyzed beyond EBMs, positions such as deputy editor, clinical reviews and education editor, web and social media editor, digital content editor, former editors, founding editors, and a very large number of other positions and functions were excluded from the analysis due to their variety and complexity and are shown in the Supplementary Material (Supplementary Table 1). Furthermore, it was not possible to include and analyze committee members of five journals, as this information was not available on their respective web pages. However, we would like to emphasize that, despite these limitations, the 4386 members identified (4242 EBM and 144 EC) represent an appropriate number of specialists to respond reliably to the objectives we had set in our work.

#### Future work

Future work could take several directions. On one hand, the list of pediatric journals could be expanded to include journals included in other databases, such as Medline/PubMed or Scopus. On the other hand, it would be important to know the evolution of the committees in the analyzed journals after a few years to observe

whether there has been progress in the representation of women. Further work could analyze the gender composition of reviewers as a potential measure of future gender diversity in editorial committees. Another line of work could focus on evaluating possible strategies to encourage the appointment of suitable women to editorial committees.

#### DATA AVAILABILITY

The raw data of the study are deposited in zenodo under Creative Commons Attribution 4.0 International Public License. DOI of raw data: <https://zenodo.org/record/4058120#.X3L8Mi8ru0>.

#### AUTHOR CONTRIBUTIONS

Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data: all authors. Drafting the article or revising it critically for important intellectual content: A.A.A., J.G.d.D., R.A.-B. Final approval of the version to be published: all authors.

#### ADDITIONAL INFORMATION

The online version of this article (<https://doi.org/10.1038/s41390-020-01286-5>) contains supplementary material, which is available to authorized users.

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