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## Special Article

## Gender biases in Spanish rheumatology: Perception and facts

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### ABSTRACT

**Objective:** To identify perceptions of gender bias in Spanish rheumatology and to quantify the involvement of both sexes in all areas of the specialty.

**Methods:** A survey was sent to all members of the SER on participation and perception of biases and of their own competencies, and actual data on participation in governing bodies, congresses, committees, and Spanish rheumatology departments in the last 5 years were reviewed.

**Results:** The survey was answered by 95 rheumatologists, 4.8% of SER members (14 men and 81 women), both groups being similar in terms of age, academic level, and position and work centre. No differences were detected in the distribution of work and non-work tasks between sexes, nor in invitations to positions of power in the last five years, nor in the perception of capacity to occupy the different positions of power, which was high for both sexes. Male respondents more frequently consider that activities such as participating in a scientific committee or giving a conference are not empowering. A third of both sexes consider that the SER should review its processes with a gender perspective but less than a third believe that this should be done by quotas. The reality of the last 5 years is that 1) there is a male to female ratio of 3:2 on SER boards of directors and in this period there has been no female president or treasurer; 2) in the scientific committees of the congresses men predominate (2:1) although slightly less in the local organizing committee; 3) there are more male speakers and moderators than women (very striking in satellite symposia, 4: 1); 4) 9 out of 10 editors-in-chief are men; 5) in academic positions there are 3 men for every 2 women, 9 to 1 in professorships or emeritus positions; although more women supervise residents; and 6) there are more women (60%) than men (40%) in Spanish rheumatology departments, although 75% of department chiefs are men.

**Conclusion:** Although not perceived by either the men or the women, there are biases in the involvement of women in important and leadership positions in the specialty.

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## Sesgos de género en la reumatología española: percepciones y realidad

### R E S U M E N

**Palabras clave:**  
Género  
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Cuotas de género

**Objetivo:** Identificar percepciones en cuanto a sesgos de género en la reumatología española y cuantificar la implicación de ambos sexos en todos los ámbitos de la especialidad.

**Métodos:** Se envió una encuesta a todos los miembros de la SER, sobre participación y percepción de sesgos y de la propia capacitación y se revisaron los datos reales de participación en órganos directivos, congresos, comités y de los servicios de reumatología españoles en los últimos cinco años.

**Resultados:** La encuesta fue respondida por 95 personas, 4,8% de los miembros de la SER (14 hombres y 81 mujeres). No se detectaron diferencias por sexo en edad, nivel académico, puesto, centro de trabajo, reparto de tareas laborales y del ámbito familiar; tampoco en las invitaciones a puestos de poder en los cinco últimos años, ni en la percepción de capacidad para ocupar los distintos puestos de poder. Los hombres encuestados consideran con mayor frecuencia que actividades como la participación en un comité científico o dar una ponencia no dan poder. Un tercio de los participantes de ambos sexos considera que la SER debería revisar sus procesos con perspectiva de género y menos de un tercio cree que debe hacerse por cuotas. Tras revisar los datos de 2015 a 2020, los ratios hombre a mujer en las principales actividades de liderazgo en reumatología en España son: 1) juntas directivas de la SER 3:2 sin presidenta ni tesorera; 2) comités científicos de los congresos 2:1; 3) ponentes y moderadores: simposios satélites, 4:1; 4) editores jefes de revistas científicas 9:1; 5) puestos académicos global 1,7:1, catedráticos 9:1, profesores titulares 100% hombres y 6) jefes de servicio: 75% son hombres a pesar de representar 40% de reumatólogos en España.

**Conclusión:** A pesar de un creciente número de mujeres en la reumatología española, estas no están suficientemente representadas en puestos de liderazgo, existiendo un sesgo de género no percibido.

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## Introduction

The world as a whole is cross-cuttingly challenged by the gender perspective. This is also the case in medicine, both for women as patients and in the medical profession.<sup>1–8</sup>

The generalised access of women to medical studies (71.3% of the student body in Spain according to student statistics for the year 2021–22<sup>9</sup>) has not translated into greater integration in academic and high-level leadership positions. This is demonstrated by studies such as those carried out by the Group of Women Hepatologists of the Spanish Society of Hepatology (SHE for its initials in Spanish),<sup>9</sup> by the Group of Women Cardiologists of the Spanish Society of Cardiology (SEC for its initials in Spanish),<sup>10</sup> and the work of primary care doctors in Andalusia.<sup>11</sup> The lower participation of women in academic life and on research project evaluation committees favours the perpetuation of this bias.<sup>10</sup>

In the European Alliance of Associations for Rheumatology (EULAR), a working group led by Laura Coates studies the existence of gender bias in rheumatology.<sup>11</sup> In Spain, we do not have data on the situation of gender bias in rheumatology. The objectives of this study are: 1) to explore the perception of gender bias in Spanish rheumatology and 2) to quantify the representation of Spanish female rheumatologists in leadership positions, both academic at university level, and scientific.

## Methods

In view of their concern regarding the above, several female rheumatologists who are members of the Spanish Society of Rheumatology (SER) took the initiative to form a gender perspective group (Women in Rheumatology), with the aim of identifying possible gender biases in Spanish rheumatology, both in terms of care and research and within the professional field itself. The group is currently unofficial, voluntary and open to both men and women.

For the first objective, a survey was developed based on the items established at a consensus meeting of the Women in Rheumatology group. Prior to the survey, no men had joined or showed interest in participating. The survey was reviewed by the group, who added and modified the proposed items until no further

changes were proposed. It was prepared in electronic format (SurveyMonkey®) and sent on 4 October 2021 to all members (n = 1950) of the SER, 1950 in total at that date. The survey was accessible for 10 days.

The survey asked about the perception of the participation of both sexes in decision-making bodies in health centres, universities and medical training, and in national and international congresses, and about the self-perception of qualification to occupy certain positions. The possible answers to these perception questions were Likert-type with a maximum of five options and free text.

The survey data are presented as absolute and relative frequencies, except occasionally by mean and standard deviation (SD) or median and interquartile range, and graphically with bar charts to facilitate comparison. Differences in the distribution of descriptors, positions and perceptions between men and women were tested with the  $\chi^2$  test or Fisher's exact test if at least one cell had a value below five, accepting a significance value of .001 to correct for multiple comparisons.

The second objective was addressed through a historical investigation of the data on participation by gender in the SER Board of Directors, the SER National Congress, the scientific committees of the SER National Congress, the editorial committees of national and foreign rheumatology journals, participation in SER consensus documents, evaluation of research projects and SER grants. In addition, the SER Research Unit was asked for aggregate data on the composition of Spanish rheumatology services as of 2019 and data on the presence of female rheumatologists in universities.

## Results

1. The survey was answered by 95 respondents (4.8% of SER members), of whom 14 (14.7%) were men and 81 (85.3%) women (Table 1). There are no major differences between the sexes in terms of age, academic level achieved or position and workplace, nor in terms of invitations to positions of power (to serve on boards, committees and other management positions or to give presentations or coordinate programmes) (Table 2). There was a high rate of initial or post-invitation refusal for a large proportion of the positions, with similar rates by gender. The last part of the survey is the per-

**Table 1**  
General characteristics of the simple interviewed.

| Descriptor   | Total<br>n = 95 | Women<br>n = 81 | Men<br>n = 14 | p    |
|--|-----------------|-----------------|---------------|------|
| <i>Age</i>   |                 |                 |               | .183 |
| <30 years  | 6 (6,3)         | 6 (7,4)         | 0             |      |
| 30–39  | 24 (25,3)       | 23 (28,4)       | 1 (7,1)       |      |
| 40–49  | 27 (28,4)       | 23 (28,4)       | 4 (28,6)      |      |
| 50–59  | 25 (26,3)       | 20 (24,7)       | 5 (35,7)      |      |
| 60 or over   | 13 (13,7)       | 9 (11,1)        | 4 (28,6)      |      |
| <i>Academic level</i>                                |                 |                 |               | .084 |
| Graduate   | 33 (35,1)       | 29 (36,3)       | 4 (28,6)      |      |
| Expert   | 5 (5,3)         | 2 (2,5)         | 3 (21,4)      |      |
| Master   | 17 (18,1)       | 15 (18,8)       | 2 (14,3)      |      |
| Doctor/a   | 39 (41,5)       | 34 (42,5)       | 5 (35,7)      |      |
| <i>Current academic position</i>                     |                 |                 |               | .061 |
| I do not give classes at the university              | 40 (42,6)       | 36 (44,4)       | 4 (30,8)      |      |
| Clinical teaching assistant                          | 29 (30,9)       | 25 (30,9)       | 4 (30,8)      |      |
| Professor/a /adjunct professor*                      | 17 (18,1)       | 15 (18,5)       | 2 (15,4)      |      |
| Full professor                                       | 2 (2,1)         | 0               | 2 (15,4)      |      |
| Others <sup>a</sup>                                  | 6 (6,4)         | 5 (6,2)         | 6 (7,7)       |      |
| <i>Years worked, mean ± SD</i>                       | 20 ± 11         | 19 ± 10         | 26 ± 11       | .022 |
| <i>Currently working</i>                             | 91 (96,8)       | 79 (97,5)       | 12 (92,3)     | .363 |
| <i>Workplace</i>                                     |                 |                 |               | .487 |
| General or specialised hospital                      | 73 (83,0)       | 63 (82,9)       | 10 (83,4)     |      |
| Multi-purpose centre                                 | 6 (6,8)         | 6 (7,9)         | 0             |      |
| Medical centre                                       | 3 (3,4)         | 2 (2,6)         | 1 (8,3)       |      |
| Primary care centre                                  | 1 (1,1)         | 1 (1,3)         | 0             |      |
| Research centre                                      | 3 (3,4)         | 3 (3,9)         | 0             |      |
| Pharmaceutical company                               | 2 (2,3)         | 1 (1,3)         | 1 (8,3)       |      |
| <i>Centre's functional status</i>                    |                 |                 |               | .871 |
| Public   | 74 (83,2)       | 64 (83,1)       | 10 (83,3)     |      |
| Private  | 12 (13,5)       | 10 (13,0)       | 2 (16,7)      |      |
| Other entities or organisations                      | 3 (3,4)         | 3 (3,9)         | 0             |      |
| <i>University centre</i>                             | 72 (75,8)       | 63 (77,8)       | 9 (64,3)      | .316 |
| <i>Centre with resident rheumatology specialists</i> | 59 (62,1)       | 52 (64,2)       | 7 (50,0)      | .376 |
| <i>Position in the organisation</i>                  |                 |                 |               | .779 |
| Head of service <sup>c</sup>                         | 10 (12,2)       | 8 (11,3)        | 2 (18,2)      |      |
| Head of section <sup>b</sup>                         | 12 (14,6)       | 10 (14,1)       | 2 (18,2)      |      |
| Deputy (staff)                                       | 54 (65,9)       | 47 (66,2)       | 7 (63,6)      |      |
| Resident physician                                   | 5 (6,1)         | 5 (7,0)         | 0             |      |
| Intern   | 1 (1,2)         | 1 (1,4)         | 0             |      |

All data are presented as n (%) unless otherwise indicated.  
SD, Standard Deviation.

\* Or associate or associate medical professor (AMP).

<sup>a</sup> Honorary, emeritus, lecturer or coordinator of master's degree, doctorate.

<sup>b</sup> Or sub-department or middle management.

<sup>c</sup> Or department or manager.

ception of gender bias. Fig. 1 shows the perception of the difficulty of access to merit by gender. Although the differences are not significant, a higher percentage of men deny that there is a greater difficulty of access to merit for women. Among the respondents, no men felt that their opinion was not taken into account in their workplace, compared to 10% of women who did have such a perception and 13% who were unclear. Thirty-three percent of male respondents felt that participating in a scientific committee or giving a presentation did not confer more power, compared to 15% of women.

Sixty-seven percent of men compared to 58% of women considered that EULAR should review its processes with a greater gender perspective ( $p = .727$ ). Some proposals in the free text of the survey are: the implementation of gender quotas both in the formation of the scientific committee of the annual EULAR congress and in the distribution of papers, in the constitution of expert groups for the elaboration of EULAR recommendations, in the coordinators of working groups and in the EULAR board of directors. Other proposals included: promoting gender research, analysing the data available to date, promoting education from a gender perspective, promoting the reconciliation of training and childcare through options, double-blind review of projects (including curriculum) for grants and scholarships, double-blind review of articles for

publication in the Annals of the Rheumatic Diseases. Among the comments, it was highlighted that professionals should be considered for expert positions on merit and not on gender, avoiding a discriminatory process in both directions. However, the comments also highlighted how networking (and with it the advertising of opportunities) and meritocracy seemed to favour men.

Sixty-seven percent of men and 64% of women considered that SER should review its processes with a gender perspective ( $p = 1.000$ ) with proposals similar to those put forward for EULAR. Again, it was mentioned in the free text that there should not be a random percentage of female participation and that personal merit should be evaluated more without taking into account the gender or level of influence of the candidate. One respondent proposed a directory of candidates by areas (diseases, research, teaching, management) with a ranking based on merit for consensus, courses, conferences, etc.

The survey also explored the degree of acceptance of gender quotas: 34% of women and 56% of men believed that they are the only way to get enough women into positions of responsibility. Fifty-nine percent of women and 56% of men found it demeaning to be elected by quota and not by worth. Twenty-one per cent believed that quotas always favour the same people and 21% believed that quotas are useless. Twenty-eight per cent of

**Table 2**  
Invitations to positions of power in the last five years, by gender.

| Invitation in the last 5 years                                | Answers                       | Woman (n = 63) | Man (n = 9) | Total (n = 72) | p    |
|---|-------------------------------|----------------|-------------|----------------|------|
| Board of Directors (national)                                 | N/A                           | 4 (6)          | –           | 4 (6)          | .962 |
|   | No, but I would accept it     | 24 (38)        | 3 (33)      | 27 (38)        |      |
|   | No, and I would not accept it | 18 (29)        | 4 (44)      | 22 (31)        |      |
|   | Yes                           | 14 (22)        | 2 (22)      | 16 (22)        |      |
|   | Yes, but I rejected it        | 3 (5)          | –           | 3 (4)          |      |
| Board of Directors (international)                            | N/A                           | 2 (3)          | 1 (11)      | 3 (4)          | .549 |
|   | No, but I would accept it     | 26 (41)        | 3 (33)      | 29 (40)        |      |
|   | No, and I would not accept it | 31 (49)        | 5 (56)      | 36 (50)        |      |
|   | Yes                           | 4 (6)          | –           | 4 (6)          |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Scientific congress committee (national)                      | N/A                           | 3 (5)          | 1 (11)      | 4 (6)          | .307 |
|   | No, but I would accept it     | 33 (52)        | 3 (33)      | 36 (50)        |      |
|   | No, and I would not accept it | 10 (16)        | 3 (33)      | 13 (18)        |      |
|   | Yes                           | 17 (27)        | 2 (22)      | 19 (26)        |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Scientific congress committee (international)                 | N/A                           | 3 (5)          | 1 (11)      | 4 (6)          | .325 |
|   | No, but I would accept it     | 35 (56)        | 3 (33)      | 38 (53)        |      |
|   | No, and I would not accept it | 20 (32)        | 5 (56)      | 25 (35)        |      |
|   | Yes                           | 5 (8)          | –           | 5 (7)          |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Project evaluation committee                                  | N/A                           | 4 (6)          | 1 (11)      | 5 (7)          | .807 |
|   | No, but I would accept it     | 33 (52)        | 4 (44)      | 37 (51)        |      |
|   | No, and I would not accept it | 11 (17)        | 2 (22)      | 13 (18)        |      |
|   | Yes                           | 15 (24)        | 2 (22)      | 17 (24)        |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Speciality project evaluation committee (national)            | N/A                           | 6 (10)         | 1 (11)      | 7 (10)         | .958 |
|   | No, but I would accept it     | 31 (49)        | 4 (44)      | 35 (49)        |      |
|   | No, and I would not accept it | 11 (17)        | 2 (22)      | 13 (18)        |      |
|   | Yes                           | 14 (22)        | 2 (22)      | 16 (22)        |      |
|   | Yes, but I rejected it        | 1 (2)          | –           | 1 (1)          |      |
| Speciality project evaluation committee (international)       | N/A                           | 4 (6)          | 1 (11)      | 5 (7)          | .638 |
|   | No, but I would accept it     | 31 (49)        | 3 (33)      | 34 (47)        |      |
|   | No, and I would not accept it | 21 (33)        | 4 (44)      | 25 (35)        |      |
|   | Yes                           | 6 (10)         | 1 (11)      | 7 (10)         |      |
|   | Yes, but I rejected it        | 1 (2)          | –           | 1 (1)          |      |
| Editor of a national scientific journal                       | N/A                           | 4 (6)          | 1 (11)      | 5 (7)          | .590 |
|   | No, but I would accept it     | 25 (40)        | 2 (22)      | 27 (38)        |      |
|   | No, and I would not accept it | 29 (46)        | 5 (56)      | 34 (47)        |      |
|   | Yes                           | 1 (2)          | –           | 1 (1)          |      |
|   | Yes, but I rejected it        | 4 (6)          | 1 (11)      | 5 (7)          |      |
| Editor of an international scientific journal                 | N/A                           | 4 (6)          | 1 (11)      | 5 (7)          | .900 |
|   | No, but I would accept it     | 16 (25)        | 2 (22)      | 18 (25)        |      |
|   | No, and I would not accept it | 34 (54)        | 5 (56)      | 39 (54)        |      |
|   | Yes                           | 4 (6)          | –           | 4 (6)          |      |
|   | Yes, but I rejected it        | 5 (8)          | 1 (11)      | 6 (8)          |      |
| Advisory board to the pharmaceutical industry                 | N/A                           | 6 (10)         | 1 (11)      | 7 (10)         | .561 |
|   | No, but I would accept it     | 12 (19)        | –           | 12 (17)        |      |
|   | No, and I would not accept it | 13 (21)        | 3 (33)      | 16 (22)        |      |
|   | Yes                           | 27 (43)        | 5 (56)      | 32 (44)        |      |
|   | Yes, but I rejected it        | 5 (8)          | –           | 5 (7)          |      |
| Work committee/Task force (national)                          | N/A                           | 7 (11)         | –           | 7 (10)         | .530 |
|   | No, but I would accept it     | 25 (40)        | 4 (44)      | 29 (40)        |      |
|   | No, and I would not accept it | 9 (14)         | 3 (33)      | 12 (17)        |      |
|   | Yes                           | 21 (33)        | 2 (22)      | 23 (32)        |      |
|   | Yes, but I rejected it        | 1 (2)          | –           | 1 (1)          |      |
| Work committee/Task force (international)                     | N/A                           | 6 (10)         | –           | 6 (8)          | .769 |
|   | No, but I would accept it     | 26 (41)        | 5 (56)      | 31 (43)        |      |
|   | No, and I would not accept it | 21 (33)        | 4 (44)      | 25 (35)        |      |
|   | Yes                           | 8 (13)         | –           | 8 (11)         |      |
|   | Yes, but I rejected it        | 2 (3)          | –           | 2 (3)          |      |
| Form part of the national commission of the speciality        | N/A                           | 4 (6)          | 1 (11)      | 5 (7)          | .037 |
|   | No, but I would accept it     | 40 (63)        | 2 (22)      | 42 (58)        |      |
|   | No, and I would not accept it | 16 (25)        | 4 (44)      | 20 (28)        |      |
|   | Yes                           | 3 (5)          | 2 (22)      | 5 (7)          |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Form part of the European Union of medical specialists (UEMS) | N/A                           | 3 (5)          | 1 (11)      | 4 (6)          | .348 |
|   | No, but I would accept it     | 29 (47)        | 2 (22)      | 31 (44)        |      |
|   | No, and I would not accept it | 27 (44)        | 6 (67)      | 33 (46)        |      |
|   | Yes                           | 3 (5)          | –           | 3 (4)          |      |
|   | Yes, but I rejected it        | –              | –           | –              |      |
| Centre/institute management                                   | N/A                           | 5 (8)          | –           | 5 (7)          | .642 |

Table 2 (Continued)

| Invitation in the last 5 years   | Answers                       | Woman (n=63) | Man (n=9) | Total (n=72) | p    |
|--|-------------------------------|--------------|-----------|--------------|------|
| Present a paper at a satellite symposium of the industry (national)      | No, but I would accept it     | 19 (31)      | 5 (56)    | 24 (34)      | .160 |
|  | No, and I would not accept it | 33 (54)      | 4 (44)    | 37 (53)      |      |
|  | Yes                           | 2 (3)        | –         | 2 (3)        |      |
|  | Yes, but I rejected it        | 2 (3)        | –         | 2 (3)        |      |
|  | N/A                           | 1 (2)        | 1 (11)    | 2 (3)        |      |
| Present a paper at a satellite symposium of the industry (international) | No, but I would accept it     | 22 (35)      | 3 (33)    | 25 (35)      | .577 |
|  | No, and I would not accept it | 8 (13)       | 3 (33)    | 11 (15)      |      |
|  | Yes                           | 29 (46)      | 2 (22)    | 31 (43)      |      |
|  | Yes, but I rejected it        | 3 (5)        | –         | 3 (4)        |      |
|  | N/A                           | 3 (5)        | 1 (11)    | 4 (6)        |      |
| Give a paper at a national congress                                      | No, but I would accept it     | 23 (37)      | 3 (33)    | 26 (37)      | .845 |
|  | No, and I would not accept it | 8 (13)       | –         | 8 (11)       |      |
|  | Yes                           | 27 (44)      | 6 (67)    | 33 (46)      |      |
|  | Yes, but I rejected it        | 4 (6)        | –         | 4 (6)        |      |
|  | N/A                           | 2 (3)        | –         | 2 (3)        |      |
| Give a paper at an international congress                                | No, but I would accept it     | 22 (35)      | 4 (44)    | 26 (36)      | .911 |
|  | No, and I would not accept it | 21 (33)      | 4 (44)    | 25 (35)      |      |
|  | Yes                           | 16 (25)      | 1 (11)    | 17 (24)      |      |
|  | Yes, but I rejected it        | 2 (3)        | –         | 2 (3)        |      |
|  | N/A                           | 2 (3)        | –         | 2 (3)        |      |
| Give a class in an CMT course (national)                                 | No, but I would accept it     | 25 (40)      | 3 (33)    | 28 (39)      | .857 |
|  | No, and I would not accept it | 7 (11)       | 1 (11)    | 8 (11)       |      |
|  | Yes                           | 29 (46)      | 5 (56)    | 34 (47)      |      |
|  | Yes, but I rejected it        | –            | –         | –            |      |
|  | N/A                           | 4 (6)        | –         | 4 (6)        |      |
| Give a class in an CMT course (international)                            | No, but I would accept it     | 27 (44)      | 3 (33)    | 30 (42)      | 1000 |
|  | No, and I would not accept it | 20 (32)      | 4 (44)    | 24 (34)      |      |
|  | Yes                           | 10 (16)      | 2 (22)    | 12 (17)      |      |
|  | Yes, but I rejected it        | 1 (2)        | –         | 1 (1)        |      |
|  | N/A                           | 2 (3)        | –         | 2 (3)        |      |
| Coordinate a course/workshop (national)                                  | No, but I would accept it     | 28 (44)      | 4 (44)    | 32 (44)      | 1000 |
|  | No, and I would not accept it | 9 (14)       | 1 (11)    | 10 (14)      |      |
|  | Yes                           | 22 (35)      | 4 (44)    | 26 (36)      |      |
|  | Yes, but I rejected it        | 2 (3)        | –         | 2 (3)        |      |
|  | N/A                           | 4 (6)        | –         | 4 (6)        |      |
| Coordinate a course/workshop (international)                             | No, but I would accept it     | 31 (49)      | 5 (56)    | 36 (50)      | 1000 |
|  | No, and I would not accept it | 23 (37)      | 4 (44)    | 27 (38)      |      |
|  | Yes                           | 4 (6)        | –         | 4 (6)        |      |
|  | Yes, but I rejected it        | 1 (2)        | –         | 1 (1)        |      |
|  | N/A                           | 3 (5)        | –         | 3 (4)        |      |
| Coordinate academic training (national)                                  | No, but I would accept it     | 32 (51)      | 4 (44)    | 36 (50)      | .725 |
|  | No, and I would not accept it | 17 (27)      | 2 (22)    | 19 (26)      |      |
|  | Yes                           | 8 (13)       | 2 (22)    | 10 (14)      |      |
|  | Yes, but I rejected it        | 3 (5)        | 1 (11)    | 4 (6)        |      |
|  | N/A                           | 4 (6)        | –         | 4 (6)        |      |
| Coordinate academic training (international)                             | No, but I would accept it     | 25 (40)      | 4 (44)    | 29 (41)      | 1000 |
|  | No, and I would not accept it | 28 (45)      | 5 (56)    | 33 (46)      |      |
|  | Yes                           | 3 (5)        | –         | 3 (4)        |      |
|  | Yes, but I rejected it        | 2 (3)        | –         | 2 (3)        |      |
|  | N/A                           | 6 (10)       | –         | 6 (8)        |      |
| Occupy a management post at work (national)                              | No, but I would accept it     | 19 (31)      | 2 (22)    | 21 (30)      | .678 |
|  | No, and I would not accept it | 33 (53)      | 6 (67)    | 39 (55)      |      |
|  | Yes                           | 4 (6)        | 1 (11)    | 5 (7)        |      |
|  | Yes, but I rejected it        | –            | –         | –            |      |
|  | N/A                           | 7 (11)       | –         | 7 (10)       |      |
| Occupy a management post at work (international)                         | No, but I would accept it     | 13 (21)      | 2 (22)    | 15 (21)      | .395 |
|  | No, and I would not accept it | 42 (67)      | 6 (67)    | 48 (67)      |      |
|  | Yes                           | 1 (2)        | 1 (11)    | 2 (3)        |      |
|  | Yes, but I rejected it        | –            | –         | –            |      |
|  | N/A                           | –            | –         | –            |      |

CMT: continuous medical training; N/A: not applicable.

women and 33% of men were in favour of the SER implementing gender quota.

2. The reality of the last five years in Spanish rheumatology. The composition of the SER boards of directors and the board of trustees (2014–2020) has a male to female ratio of 3:2, although there has been no female president or treasurer during this period (Table 3). There were 33% men in the secretariat and 44% in the board memberships. In the SER Congress (from 2015 to 2020) there are 65%

men in the Scientific Committee and 40% in the organizing committee; in the SER tables there are 70% men in coordination, 61% in moderation and in the papers, 47% in the oral communications; in how to treat there are 50% women in moderation and 78% in speakers. In the keynote lectures, 86% of the moderators and 100% of the speakers were men. In the discussion groups there are 62% men, in the workshops 57% women and in the breakfasts 61% women (Table 4).

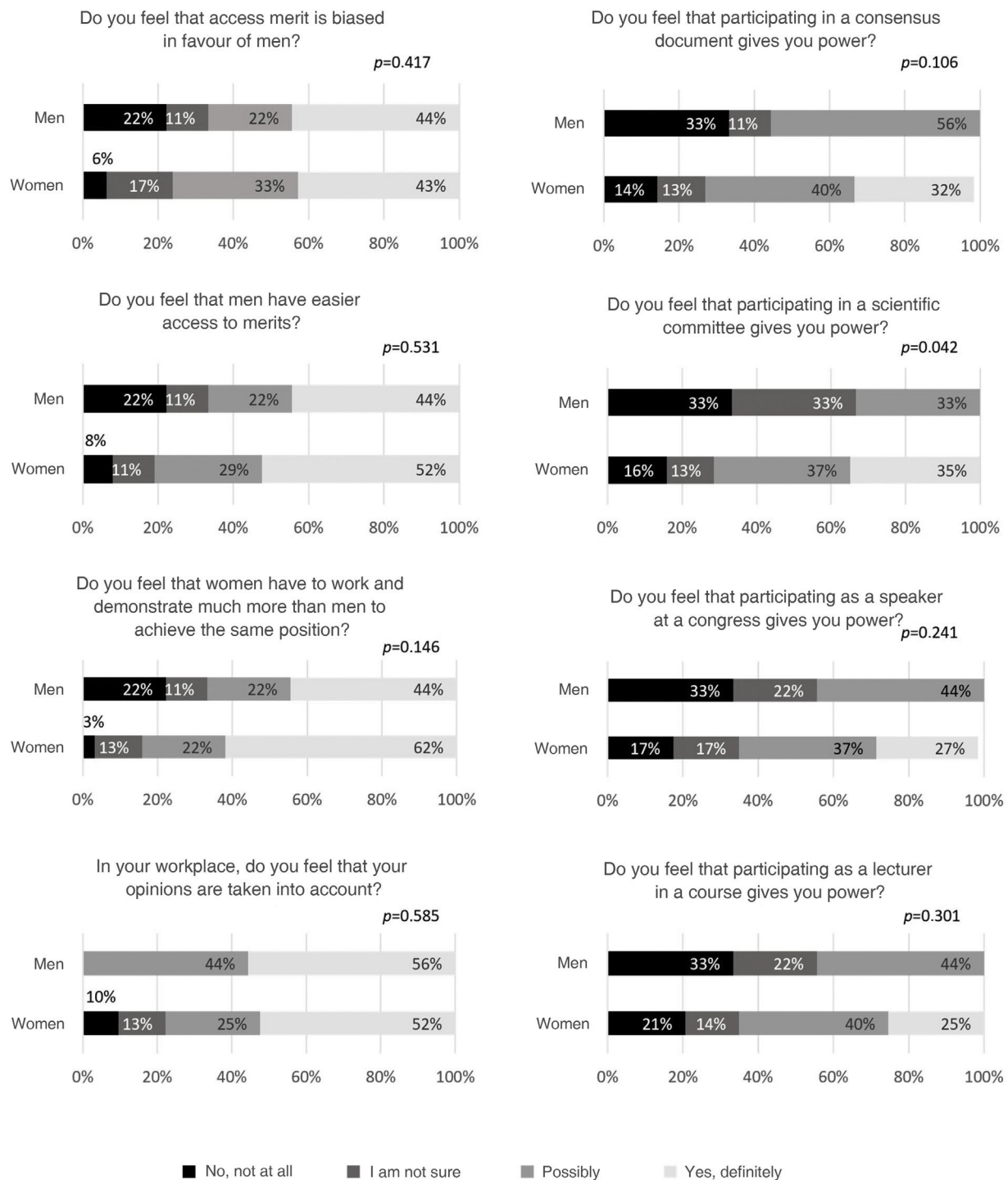


Figure 1. Perception of gender biases, by sex.

In the EULAR satellite symposia from 2017 to 2020, 84% of the speakers, 88% of the moderators and 68% of the scientific committee are men (Table 4).

In SER consensus papers from 2010 to 2019, 65% are men (more detail in table S4 in the supplementary material).

The Editor-in-chief of Rheumatology journals is male in 87% of the journals and female in 13% (more detail in Appendix Table S5 of the Supplementary material).

At Spanish universities, associate professors are 59% male, full professors 100% male, senior full professors 84% male (more detail in Appendix Table S6 of the Supplementary material).

At the time of the study there were 908 rheumatologists at the SER, 60.5% women and 39.5% men. Female section chiefs are 39% compared to 61% men. Female heads of service are 23.6% and 76.4% men. The average age of male service chiefs is 60.57 years and 58.23 years for female service chiefs.

Fig. 2 is a summary of all the collected information.

### Discussion

This paper has addressed two aspects: firstly, by means of a survey, the perception of gender bias and, secondly, the description of Spanish rheumatology from a gender perspective.

**Table 3**  
Participation by gender in boards and boards of trustees of the SER and FER (2014–2020).

| Board of directors of the SER | 2014–2016 | 2016–2018 | 2018–2020 | Total | %   |
|-------------------------------|-----------|-----------|-----------|-------|-----|
| Male presidents               | 1         | 1         | 1         | 3     | 100 |
| Female presidents             | 0         | 0         | 0         | 0     | 0   |
| Male presidents-elect         | 1         | 1         | 1         | 3     | 100 |
| Female presidents-elect       | 0         | 0         | 0         | 0     | 0   |
| Male vice presidents          | 2         | 2         | 1         | 5     | 83  |
| Female vice presidents        | 0         | 0         | 1         | 1     | 17  |
| Male general secretaries      | 0         | 1         | 0         | 1     | 33  |
| Female general secretaries    | 1         | 0         | 1         | 2     | 67  |
| Male vice secretaries         | 2         | 1         | 1         | 4     | 67  |
| Female vice secretaries       | 0         | 1         | 1         | 2     | 33  |
| Male treasurers               | 1         | 1         | 1         | 3     | 100 |
| Female treasurers             | 0         | 0         | 0         | 0     | 0   |
| Male accountants              | 1         | 1         | 1         | 3     | 100 |
| Female accountants            | 0         | 0         | 0         | 0     | 0   |
| Spokesmen                     | 6         | 5         | 5         | 16    | 44  |
| Spokeswomen                   | 6         | 7         | 7         | 20    | 56  |
| Board of trustees of the SER  |           |           |           |       |     |
| Male presidents               | 1         | 1         | 1         | 3     | 100 |
| Female presidents             | 0         | 0         | 0         | 0     | 0   |
| Male vice presidents          | 3         | 3         | 2         | 8     | 89  |
| Female vice presidents        | 0         | 0         | 1         | 1     | 11  |
| Male general secretaries      | 0         | 1         | 0         | 1     | 33  |
| Female general secretaries    | 1         | 0         | 1         | 2     | 67  |
| Male treasurers               | 1         | 1         | 1         | 3     | 100 |
| Female treasurers             | 0         | 0         | 0         | 0     | 0   |
| Spokesmen                     | 13        | 11        | 12        | 36    | 58  |
| Spokeswomen                   | 6         | 8         | 12        | 26    | 42  |

FER: Spanish Foundation of Rheumatology; SER: Spanish Society of Rheumatology.

Participation in the survey was less than 5% of SER members (even lower for some questions, such as those in Table 2), so its statistical power and representativeness are very low. However, its main conclusion is precisely this: that less than 5% of the members answered the survey. This gives us an idea of how little relevance or interest this question has for the majority. However, although most of the respondents – without being able to detect differences between men and women – do not perceive gender bias, the exhaustive review of the current data and the description of Spanish rheumatology shows that there is. We could ask ourselves what those who did not answer the survey think: can we presume that if they perceived gender bias, they would have answered in order to make their perception evident? We believe that, precisely because this is unlikely, most of those who did not answer the survey do not perceive gender bias.

The reality of Spanish rheumatology shows a vertical gender segregation in the composition of rheumatology services. Despite a majority of female rheumatologists, only a quarter of service chiefs and just over a third of section chiefs are women, and this is not explained by age, which is similar between male and female service chiefs.

Our data are similar to those found in hepatology by the Spanish Group of Women Hepatologists (GEMHEP), which showed that only 21.4% of the highest leadership positions are held by women, despite the fact that women make up 56.23% of the staff. At scientific events, female hepatologists were first authors in 60% of the original oral presentations, but only 19% participated as invited speakers or moderators.<sup>9</sup> Similar results were found by the SEC Working Group on Women in Cardiology,<sup>10</sup> where the representation of women is 40%, although only 19% are chief clinicians, 11% head of service and 7% full professors, not explained by age bias.<sup>10</sup>

Women's access to positions of power depends not only on merit, but also on other factors, including evaluation biases. These biases are socio-cultural and are experienced by both men and women. To illustrate this situation, a study was carried out with 200 male and female teachers who were sent the same curriculum vitae (CV) for evaluation as a candidate for a laboratory manager

position.<sup>12</sup> One hundred of the CVs had John's name and 100 had Jennifer's name. Despite being identical, Jennifer was rated lower on all the parameters studied and was also given a lower salary. There were no differences between male and female professors.<sup>12</sup>

Spanish public universities have 21% female professors, 8% female rectors. In the 2016 state call for proposals for R&D&I projects, women accounted for 24% of the chairs. Women are more represented as participants in research teams than as principal investigators.<sup>10</sup> Women carry a greater burden than men during the reproductive and childbearing years. For equal age, seniority as PhD holders, field of knowledge and academic productivity, a full professor is 2.5 times more likely to be a full professor than a woman and four times more likely if the woman has children.<sup>13</sup>

There is also a large visibility bias. In EULAR, the gender perspective working group led by Laura Coates finds (2015–2019)<sup>14</sup> in EULAR congresses the proportion of women moderators and speakers from 40% to 43%. In 2019, women at national congresses were 29% in France, 30%, in Germany 42% in Spain, 42%, in UK, and 40% in EULAR.<sup>14</sup> At the 2011 EULAR satellite symposia, men were 91%, and in 2012, 86%.<sup>15</sup> Meanwhile, at the American College of Rheumatology (ACR) congress in 2017 and 2018, the proportion of female speakers and moderators combined was 42.8% in 2017 and 47% in 2018. There was a higher proportion of female speakers in clinical sessions than in basic science (mean 45.8% vs. 40.5%). Association of Rheumatology Health Professionals (HRP) sessions had the highest proportion of female representation (average 65.3%), while Meet the Professor and workshops had the lowest (34.4 and 28.7%, respectively).

In our research, the data show the existence of gender bias in positions of power or influence and in work groups involving curriculum improvement in Spanish rheumatology. However, in the survey, with the serious limitations caused by low participation, it is observed that the perception of bias is small and not very different between men and women, although men more frequently deny that there are difficulties for women, and also consider that participating in a scientific committee or in a paper does not give power.

**Table 4**  
Participation by gender in scientific committees and congresses of the SER and satellite symposia of EULAR (2015–2020).

| Scientific committees                      | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | %   |
|--|------|------|------|------|------|------|-------|-----|
| Male president (local organiser)           | 1    | 1    | 1    | 1    | 0    | 1    | 5     | 83  |
| Female president (local organizer)         | 0    | 0    | 0    | 0    | 1    | 0    | 1     | 16  |
| Male members of the scientific committee   | 8    | 10   | 7    | 5    | 4    | 5    | 39    | 66  |
| Female members of the scientific committee | 2    | 2    | 5    | 3    | 4    | 4    | 20    | 34  |
| Male members of the organizing committee   | 4    | 6    | 5    | 6    | 5    | 4    | 30    | 56  |
| Female members of the organizing committee | 7    | 3    | 3    | 3    | 2    | 6    | 24    | 44  |
| SER tables                                 |      |      |      |      |      |      |       |     |
| Male coordinators                          | 17   |      | 14   | 13   | 13   |      | 57    | 70  |
| Female coordinators                        | 6    |      | 8    | 6    | 5    |      | 25    | 30  |
| Male moderators                            | 34   |      | 34   | 36   | 29   |      | 133   | 61  |
| Female moderators                          | 17   |      | 26   | 18   | 23   |      | 84    | 39  |
| Male speakers                              | 55   |      | 47   | 43   | 42   |      | 187   | 61  |
| Female speakers                            | 25   |      | 35   | 30   | 28   |      | 118   | 39  |
| Male oral presentations                    |      |      | 17   | 13   | 13   |      | 43    | 47  |
| Female oral presentations                  |      |      | 15   | 16   | 17   |      | 48    | 53  |
| Oral communications                        |      |      |      |      |      |      |       |     |
| Male moderators                            |      |      | 1    | 2    | 3    |      | 6     | 50  |
| Female moderators                          |      |      | 3    | 2    | 1    |      | 6     | 50  |
| Male speakers                              |      |      | 7    | 7    | 9    |      | 23    | 64  |
| Female speakers                            |      |      | 5    | 5    | 3    |      | 13    | 36  |
| How to treat                               |      |      |      |      |      |      |       |     |
| Male moderators                            |      |      | 0    | 2    | 1    |      | 3     | 50  |
| Female moderators                          |      |      | 0    | 1    | 2    |      | 3     | 50  |
| Male speakers                              |      |      | 0    | 2    | 0    |      | 2     | 22  |
| Female speakers                            |      |      | 3    | 1    | 3    |      | 7     | 78  |
| Keynote lectures                           |      |      |      |      |      |      |       |     |
| Male moderators                            |      |      | 6    | 3    | 3    |      | 12    | 86  |
| Female moderators                          |      |      | 0    | 1    | 1    |      | 2     | 14  |
| Male speakers                              |      |      | 4    | 4    | 4    |      | 12    | 100 |
| Female speakers                            |      |      | 0    | 0    | 0    |      | 0     | 0   |
| Group discussions                          |      |      |      |      |      |      |       |     |
| Male participants                          |      |      | 11   | 7    | 11   |      | 29    | 62  |
| Female participants                        |      |      | 4    | 8    | 6    |      | 18    | 38  |
| Workshops                                  |      |      |      |      |      |      |       |     |
| Male participants                          |      |      | 5    | 5    | 3    |      | 13    | 43  |
| Female participants                        |      |      | 1    | 13   | 3    |      | 17    | 57  |
| Breakfasts with experts                    |      |      |      |      |      |      |       |     |
| Male experts                               |      |      | 4    | 2    | 6    |      | 12    | 39  |
| Female experts                             |      |      | 6    | 7    | 6    |      | 19    | 61  |
| Total men                                  | 106  |      | 150  | 139  | 137  |      | 532   | 60  |
| Total women                                | 48   |      | 106  | 108  | 98   |      | 360   | 40  |
| EULAE satellite symposia                   |      |      |      |      |      |      |       |     |
| Male speakers                              |      |      | 102  | 92   |      | 50   | 244   | 84  |
| Female speakers                            |      |      | 23   | 13   |      | 10   | 46    | 16  |
| Male moderators                            |      |      | 39   | 35   |      | 16   | 90    | 88  |
| Female moderators                          |      |      | 3    | 7    |      | 2    | 12    | 12  |
| Scientific committee - Men                 |      |      | 16   | 15   | 17   | 15   | 63    | 68  |
| Scientific committee - Women               |      |      | 7    | 8    | 7    | 7    | 29    | 32  |

No collaborating committees (external), abstract evaluation committee, or congress organisation committee (COC) are included.

It was not possible to collect information on tables and sessions in 2016 and 2020. Some types of sessions were not included in the congresses in editions prior to 2017.

Information could not be collected for symposia in 2015 and 16 and only partial in 2019.

One Madrid, two Amsterdam, three virtual.

EULAR: European Alliance of Associations for Rheumatology; SER: Spanish Society of Rheumatology.

This disparity between perception and reality is highly striking, as is the lack of awareness, or passivity, that has existed up to now.

Only 28% of women and 33% of men consider it appropriate for the SER to implement gender quotas. To the question, (if I were a woman) I would feel denigrated for being elected by quota and not for my worth; 59% of women and 56% of men responded positively. A common criticism of gender quotas is that women are elected to positions of power because they are women and not because of their worth. This is a false dilemma, as it poses two or more mutually exclusive options, but leaves out many other possible options (the question: would you feel denigrated if you were chosen for a job because you were a woman rather than because of your worth? This is a false dilemma).

One research study in Sweden<sup>16,17</sup> shows that the opposite may be true: quotas increased the competence of politicians by displac-

ing mediocre men. In business, quotas displace men, but those who remain are the best.<sup>17</sup> This is why organisations improve, because the best men and the best women join them. By applying quotas, women are not chosen because they are women, whatever they are worth, but because they are the best for the job, as well as being women, because quotas are binding and guarantee accessibility: otherwise, women would not have got this far. Moreover, gender quotas are protected by Article 9.2 of the Constitution.<sup>18</sup> They are a positive action that is introduced to solve a historical injustice and that will be abolished when this injustice is solved. In other words, by their nature and formulation they have to be transitory. In order for gender quotas to make sense, in order to maintain the justice achieved with them, a profound transformation of society is necessary.

In conclusion, there are gender biases in Spanish rheumatology, although they are not perceived as proven realities and it is



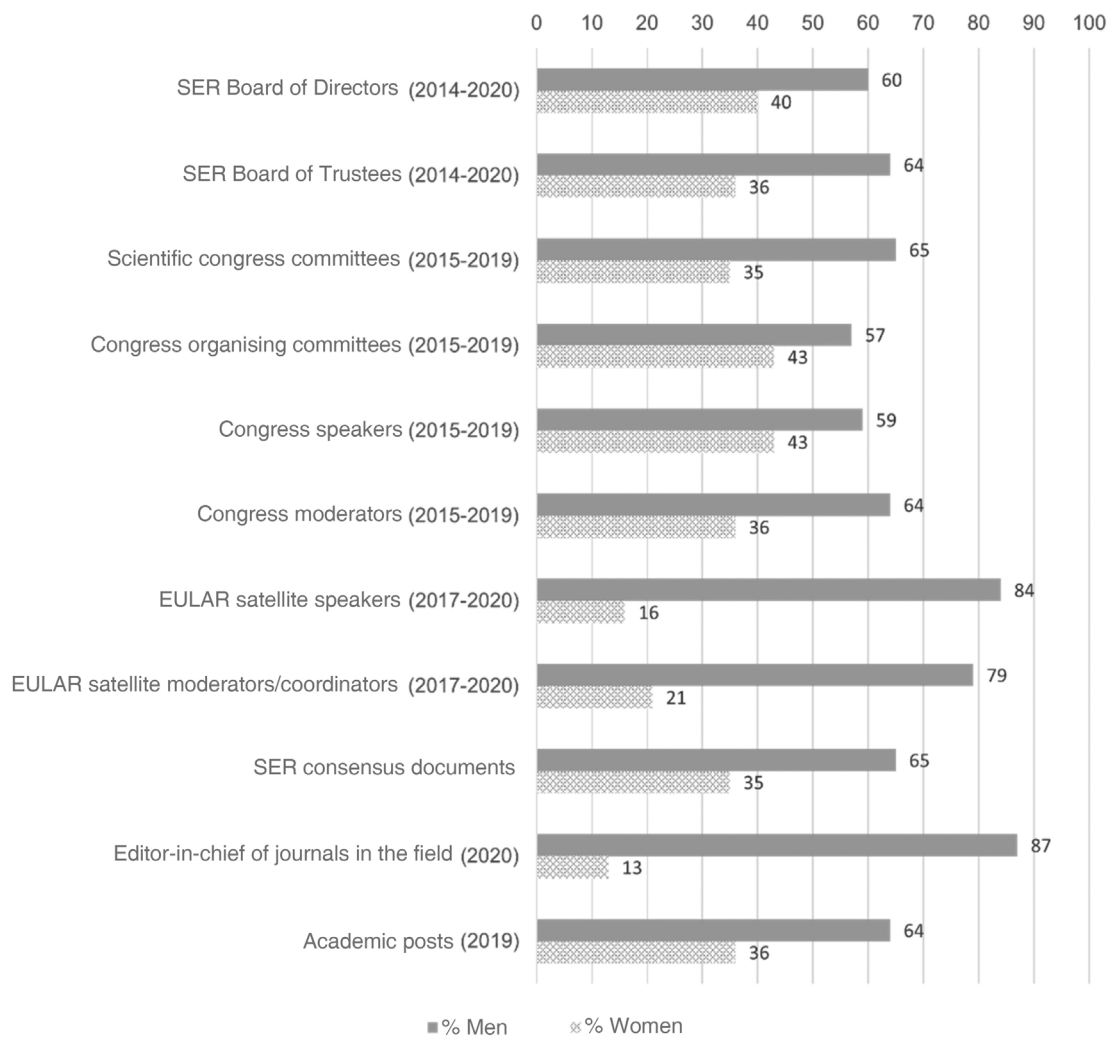


Figure 2. Summary of the participation percentages between men and women in rheumatology.

striking that interest in gender bias in rheumatology in Spain is so manifestly low.

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**Conflict of interests**

The authors have no conflict of interests to declare.

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**Appendix A. Supplementary data**

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.reumae.2023.02.007>.

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