

# Gender disparities in high-quality dermatology research - a study on scientific authorships

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**Content:**

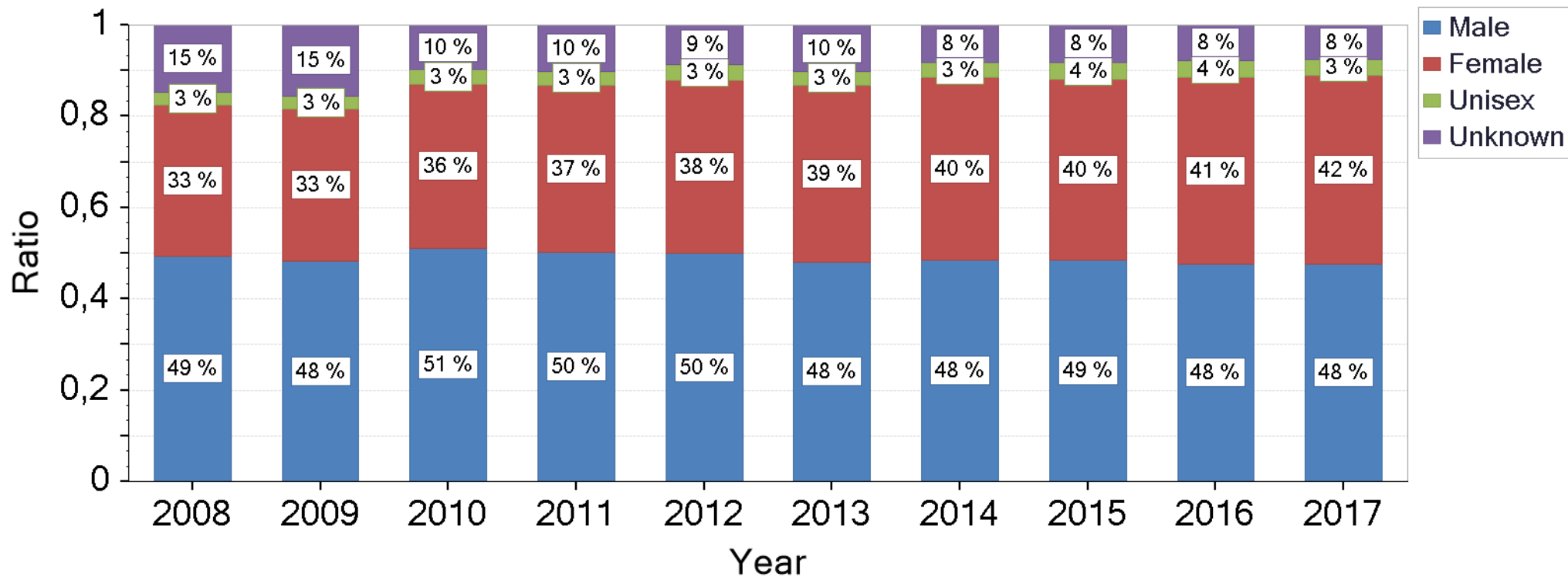
**SFig 1: Gender Detection Output by Time.**

**SFig 2: Quality of algorithmic gender detection by country.**

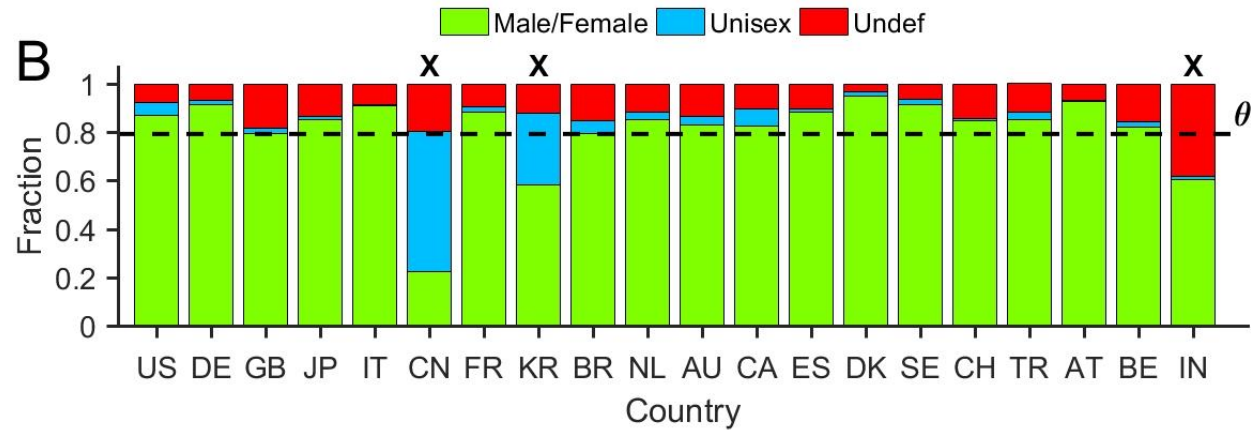
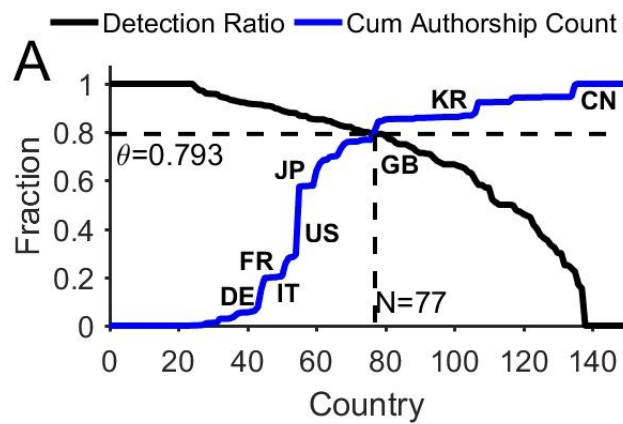
**SFig 3: Bibliometric overview.**

**SFig 4: Test for alphabetical ordering of the author list.**

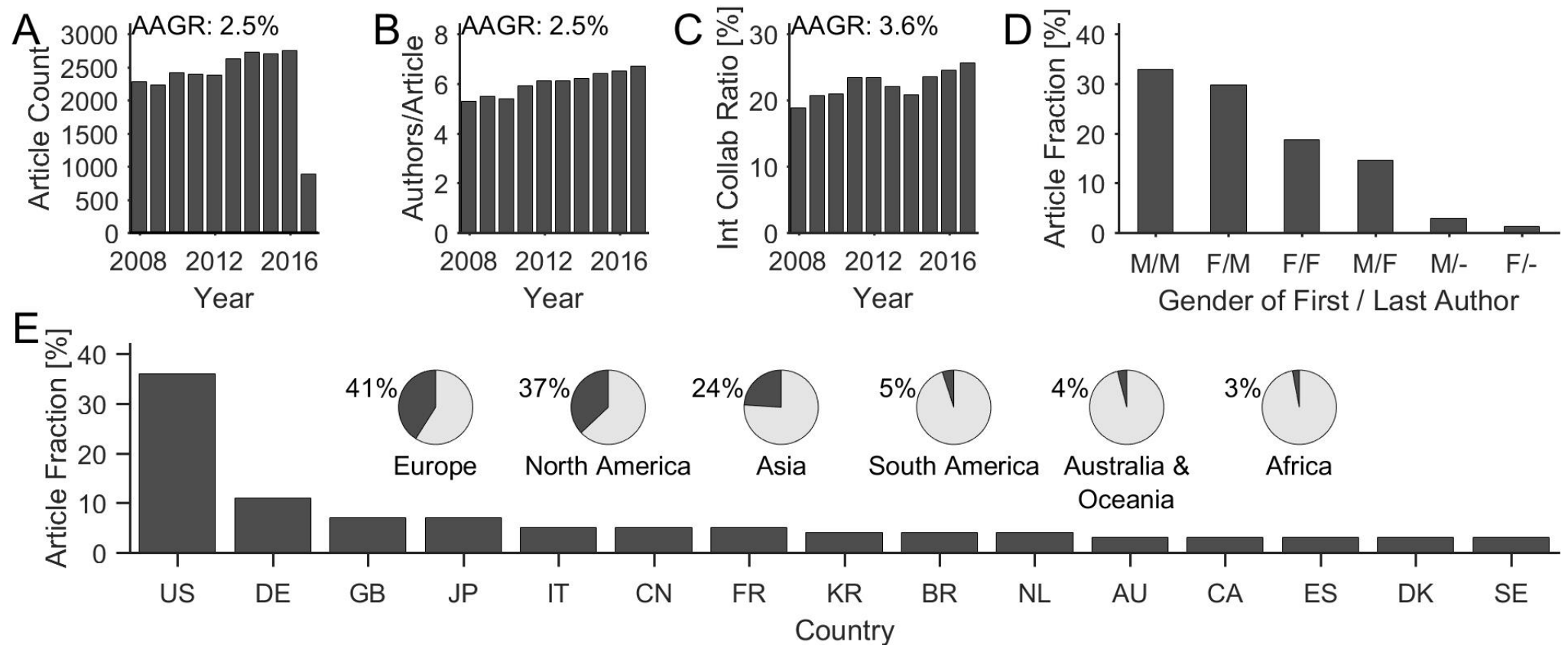
**SFig 5: Probability density function of the citation rate.**



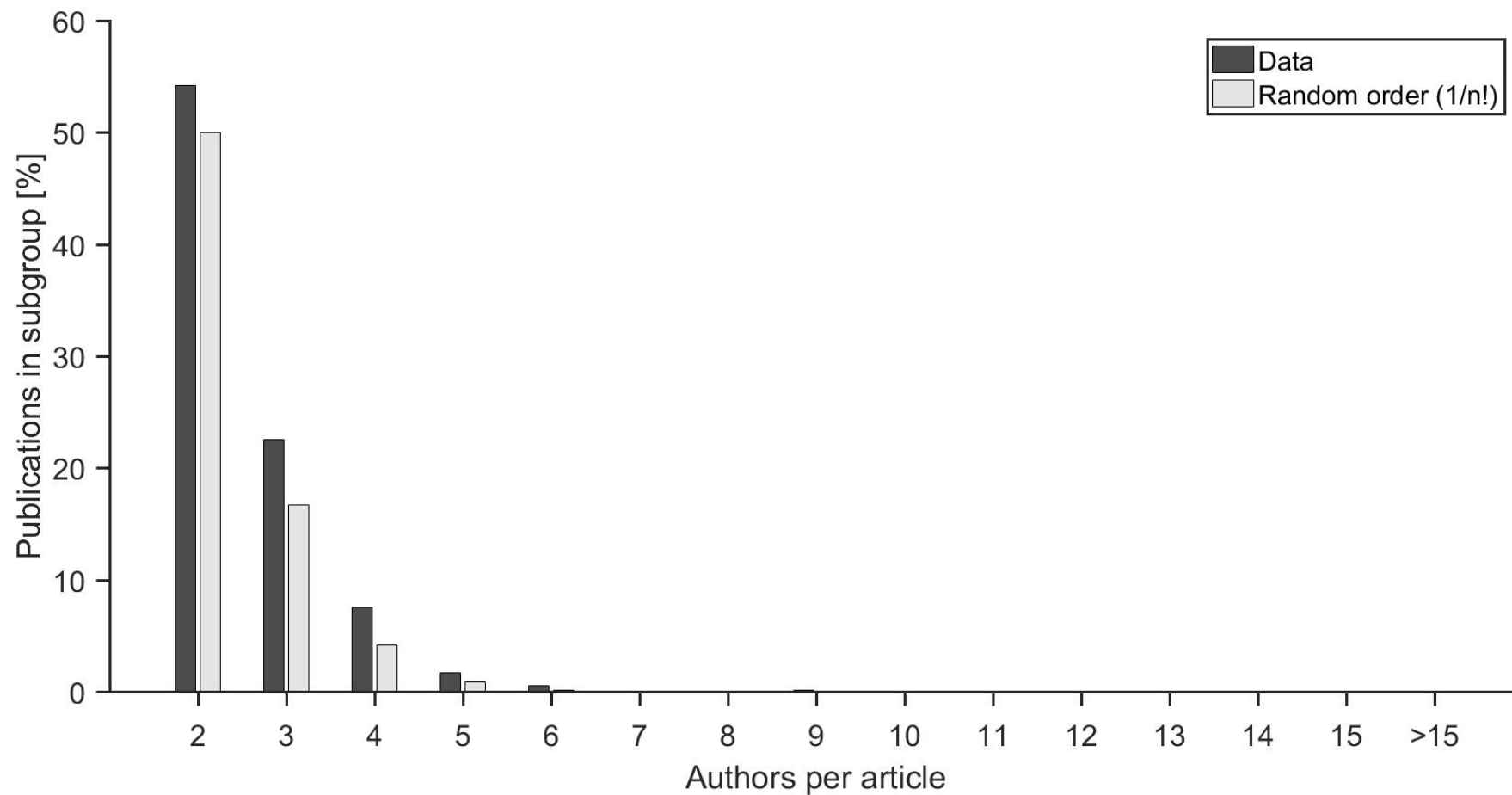
**Sfig 1: Gender Detection Output by Time.** The ratios of detected male, female, unisex and undefined authorships ordered by publication year document a relatively small inter-annual variability.



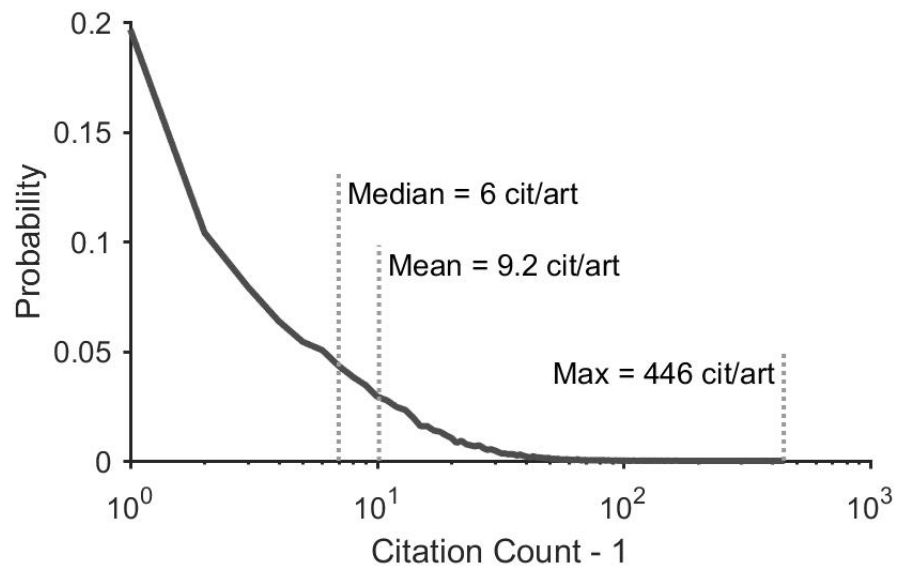
**Sfig 2: Quality of algorithmic gender detection by country.** (A) An adaptive threshold country criterion  $\theta$  for the inclusion of a country in the country-specific gender analysis was defined by a ROC-like curve incorporating both detection ratio and cumulative author count [1]. In this study, countries with a detection rate of at least  $\theta = 0.793$  male + female authors (i.e. 79.3% of all authorships) from  $N=77$  countries were included in the country-specific analysis. Countries with a large amount of authors are indicated by country code. (B) The result of the algorithmic gender detection - classified as male/female, unisex or undefined - grouped by countries that are ordered in descending order by their publication count, documents a relative high frequency of male/female authors for most of the top 20 countries, with the exception of the Asian countries China (CN), South Korea (KR), and India (IN). The latter countries are characterized by a high frequency of unisex (CH, KR) or unknown names (IN) and are excluded (X) from analysis due to the threshold criterion  $\theta$  (dotted line). AU=Australia, AT=Austria, BE=Belgium, BR=Brazil, CA=Canada, CH=Switzerland, CN=China, DE=Germany, DK=Denmark, ES=Spain, FR=France, GB=United Kingdom, IL=Israel, IN=India, IT=Italy, JP=Japan, KR=South Korea, NL=Netherlands, SG=Singapore, SE=Sweden, TR=Turkey, US=United States.



**SFig 3: Bibliometric overview.** (A) The article count increases from 2,281 in 2008 to 2,750 in 2015; the average annual growth rate (AAGR) is 2.5%. (B) The number of authors per article increases from 5.3 authors/article in 2008 to 6.7 authors/article in 2017. (C) The percentage of international collaboration articles increases from 18.9% in 2008 to 25.6% in 2017 with an AAGR of 3.6%. (D) The fraction of articles grouped the gender of their key authors' documents a quantitative superiority of articles with male last authorships. (E) The fraction of articles is depicted by country (bar plot) and by continent (pie charts). Please note that the sum of percentages is greater than one due to international collaborations. AU=Australia, BR=Brazil, CA=Canada, CH=Switzerland, CN=China, DE=Germany, DK=Denmark, ES=Spain, FR=France, GB=United Kingdom, IT=Italy, KR=South Korea, NL=Netherlands, SE=Sweden, US=United States.



**SFig 4: Test for alphabetical ordering of the author list.** The proportion of publications with an alphabetic ordered author list is depicted with respect to the authors per article (blue). The values correspond very closely to those obtained for randomly ordered author lists (yellow).



**SFig 5: Probability density function of the citation rate.** The semi-logarithmic plot of the citation count per article (=citation rate) exhibits an exponential-like decreasing probability density function with a mean citation rate of 9.2 citations/article.

## References

1. Bendels MHK, Brüggmann D, Schöffel N, Groneberg DA. Gendermetrics.NET: a novel software for analyzing the gender representation in scientific authoring. *J Occup Med Toxicol.* 2016;11:43.