

Female neurosurgeon

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It is crucial to promote the role of [women](#) in surgery, particularly in the field of neurosurgery, which is still predominantly male-dominated.

In a study Lambrianou et al. found that, women neurosurgeons take more responsibilities at home, especially in the child-rearing years. Female neurosurgeons are more likely to live alone or stay childless more often compared to their male colleagues. Supportive facilities, flexible programs, universal life policies and presumably curbing of the social stereotypes are of importance to overcome gender inequities that women are still facing in neurosurgery ¹⁾

History

The first female neurosurgeon professor in France was born in 1944 during the last years of World War II to immigrant parents from Spain. Thanks to [grants](#) and [scholarships](#) from the French [government](#), [Aimée Redondo](#) was able to continue her [education](#). She excelled in high school and even passed the entrance exam for [medical school](#) on her first attempt - a rare achievement at the time. In [1975](#), at the young age of 31, she became the first female professor of neurosurgery in France. After completing her residency, she worked as a senior neurosurgeon at the Salpêtrière Hospital in Paris and then joined the newly established department of neurosurgery at Beaujon Hospital. For over thirty years, she was a crucial member of this department and served as its head from 2004 until her retirement. Sadly, she passed away in 2022 at the age of 78 ²⁾

Some noteworthy women who have carved the path for other women to follow in their footsteps include Drs. [Sofía Ionescu](#) and [Diana Beck](#), are the first and second female neurosurgeons worldwide, respectively. However, there are limited publications on Dr. [María Cristina García-Sancho](#), the first

Latina neurosurgeon. The purpose of this review was to illuminate the neurosurgical community on the life of Dr. García-Sancho. Dr. García-Sancho earned her medical degree at the School of Medicine of the National Autonomous University of Mexico under the guidance of Dr. Clemente Robles, who founded Mexico's first neurosurgical department. Her training took her worldwide. Her expertise allowed her to pioneer a revolutionary advancement known as the one-step bilateral cordotomy. Her perseverance led her to become the head of the Department of Neurosurgery at the National Cancer Institute of Mexico and co-found the Mexican Society of Neurological Surgery (MSNS), where she served on the board of directors. This review aims to advocate for an equitable environment in the field of neurosurgery with Dr. García-Sancho's story ³⁾.

The [history](#) of [women](#) in neurosurgery worldwide has been characterized by [adversity](#) and hardships in a male-dominated field, where resilient, tenacious, and ingenious women have nevertheless left their mark. The first women in neurosurgery appeared in [Europe](#) at the end of the 1920s, and since then have emerged in all continents in the world. Women [neurosurgeons](#) all over the globe have advanced the field in numerous directions, introducing neurosurgical [subspecialty](#) to their countries, making scientific and technical [advances](#), and dedicating themselves to humanitarian causes, name a few. The past 30 years, in particular, have been a period of increasing involvement and [responsibility](#) for women in neurosurgery. We must now focus on continual system improvements that will promote a diverse and talented workforce, building a welcoming environment for all aspiring [neurosurgeons](#), in order to advance the specialty in the service of neurosurgical [patients](#) ⁴⁾.

A retrospective [cross-sectional study](#) used publicly accessible [Medicare](#) data on [reimbursements](#) to female and male neurosurgeons for procedural and [evaluation](#) and [management](#) services delivered in both [inpatient](#) and [outpatient](#) settings between January 1, 2013, and December 31, 2020. Data were analyzed from December 9, 2021, to December 5, 2022.

Main [outcomes](#) and [measures](#): The primary outcome was the mean annual payments received and charges submitted by female and male neurosurgeons for services rendered between 2013 and 2020. Secondary outcomes included the total number and types of services rendered each year and the number of beneficiaries treated. Univariate and multivariable analyses quantified differences in payment, practice volume, and composition.

Results: A total of 6052 neurosurgeons (5540 men [91.54%]; 512 women [8.46%]) served the Medicare fee-for-service patient population. Female neurosurgeons billed for lesser Medicare charges (mean [SE], \$395 851.62 [\$19 449.39] vs \$766 006.80 [\$11 751.66]; $P < .001$) and were reimbursed substantially less (mean [SE], \$69 520.89 [\$2701.30] vs \$124 324.64 [\$1467.93]; $P < .001$). Multivariable regression controlling for practice volume metrics revealed a persistent reimbursement gap (-\$24 885.29 [95% CI, -\$27 964.72 to -\$21 805.85]; $P < .001$). Females were reimbursed \$24.61 less per service than males even after matching services by code ($P = .02$).

Conclusions and Relevance: This study found significant gender-based variation in practice patterns and [reimbursement](#) among neurosurgeons serving the Medicare fee-for-service population. Female surgeons were reimbursed less than male surgeons when both performed the same primary [procedure](#). Lower mean reimbursement per service may represent divergence in billing and coding practices among females and males that could be the focus of future [research](#) or [educational](#) initiatives ⁵⁾.

Female neurosurgeon representation has increased, but women still represent only 8.4% of neurosurgeons in the US. Women are significantly underrepresented as authors in neurosurgical and spine journals, a key indicator of professional success in academic medicine. Johnson et al. aimed to assess the gender diversity of first and last authors of accepted abstracts at neurosurgical conferences in 2015 and 2019.

Annual meeting abstracts for 2015 and 2019 of the American Association of Neurological Surgeons (AANS), Congress of Neurological Surgeons (CNS), and pediatrics, spine, stereotactic and functional surgery, and cerebrovascular AANS/CNS subspecialty sections were obtained and analyzed for gender. Partial data were obtained for tumor and pain sections. Composite gender data were obtained from the societies. Percentage differences were calculated using a comparison of proportions testing.

Overall, female neurosurgeons accounted for only 8.3% of first and 5.8% of last authors, and 7.2% of authors overall. The pediatrics section had the highest proportion of female neurosurgeons as first (13.7%) and last (12.4%) abstract authors, while the spine section had the lowest proportions of female neurosurgeon first (4.6%) and last (2.0%) authors. Qualitatively, a higher proportion of women were first authors, while a higher proportion of men were last authors. Overall, there was no significant change in female neurosurgeon authorship between 2015 and 2019. With regard to society demographics, female neurosurgeons accounted for only 6.3% of AANS membership. The pediatrics section had the highest proportion of female neurosurgeons at 18.1% and the stereotactic and functional surgery section had the lowest of the subspecialty sections (7.6%). While female neurosurgeons represented 12.6% of spine section membership, they represented only 4.7% of first authors (-7.9% difference; $p < 0.0001$) and 2.4% of last authors (-10.2% difference; $p < 0.0001$). For the 2019 cerebrovascular section, female neurosurgeons were underrepresented as presenting authors (5.8%) compared with their membership representation (14.8%, -9.0% difference; $p = 0.0018$).

Despite an increase in the number of female neurosurgeons, there has not been a corresponding increase in the proportion of female neurosurgeons as abstract authors at annual neurosurgery conferences, and female neurosurgeons remain underrepresented as authors compared with their male colleagues ⁶⁾

The ongoing trend of societal evolution in contemporary civilization has allowed increased inclusion of heterogenous identity groups into fields, such as neurosurgery, where certain groups have traditionally been underrepresented. In regard to the field of neurosurgery, the increasing recognition of the disparities faced by women is illustrated by a growing body of academic literature.

Methods: We conducted a bibliometric analysis querying the PubMed, Web of Science (WoS), Scopus, and Embase databases for articles on female neurosurgeon using the MeSH terms “woman,” “women,” “gender,” neurosurgery, “neurological surgery,” and “neurosurgeon”. Articles were excluded if they do not concern societal impact of non-male population in the context of neurosurgery. Total citations, mean citations per year, publishing journal information, and author demographics were abstracted from included reports. Associations between abstracted continuous variables was evaluated using the Pearson correlation coefficient. Derived p-values of less than 0.05 were taken as significant.

Results: A total of 49 articles were included. Total numbers of citations per report were positively associated with mean citations per year ($r=0.7289$, $p=0.0253$) the latter of which was slightly

negatively associated with the age of the report ($r=-0.0413$, $p=0.0009$). Age of publication year was found to be negatively correlated with the number of reports published per year ($r=-0.648$, $p=0.0066$). Total citations per reports were significantly correlated with increased numbers of citations during the last completed calendar year (2019: $r=0.8956$, $p=0.0397$).

Conclusion: ecognition in societal evolutionary trends as evidenced by academic activity has shown increased focus on the explicit and intrinsic biases faced by female neurosurgeon. Recent years have seen significant increases in published reports concerning the subject as well as rising academic impact per a given report. This phenomenon is speculated to continue and understanding to broaden as societal perception continues to develop ⁷⁾.

Women's history month and the history of [women](#) in [neurosurgery](#) ⁸⁾.

The objective of a study was to evaluate whether there are disparities in academic rank and promotion between men and women neurosurgeons.

The profiles of faculty members from 50 academic neurosurgery programs were reviewed to identify years in practice, number of PubMed-indexed publications, Doctor of Philosophy (PhD) attainment, and academic rank. The number of publications at each academic rank was compared between men and women after controlling for years in practice by using a negative binomial regression model. The relationship between gender and each academic rank was also determined after controlling for clustering at the institutional level, years in practice, and number of publications.

Of 841 faculty members identified, 761 (90%) were men ($p = 0.0001$). Women represented 12% of the assistant and associate professors but only 4% of the full professors. Men and women did not differ in terms of the percentage holding a PhD, years in practice, or number of publications at any academic rank. After controlling for years in practice and clustering at the facility level, the authors found that men were twice as likely as women to be named full professor (OR 2.2, 95% CI 1.09-4.44, $p = 0.03$). However, when institution, years in practice, PhD attainment, h-index, and number of publications were considered, men and women were equally likely to attain full professorship (OR 0.9, 95% CI 0.42-1.93).

Data analysis of the top neurosurgery programs suggests that although there are fewer women than men holding positions in academic neurosurgery, faculty rank attainment does not seem to be influenced by gender ⁹⁾.

Pregnant neurosurgical resident

see [Pregnant neurosurgical resident](#)

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