

Participation of women in general surgery in Colombia: an x-ray of the latin American reality

Abstract

Background: Women choose surgery because academic challenges and technical components. With this work we want to establish the real participation of women in the general surgery residency and the professional level in Colombia.

Methods: We conducted a survey in academic and surgical training centers, surgical centers in capital cities and in university teaching centers 2020 to establish the percentage of participation of women in residency and employment in general surgery.

Results: Women represent 39% of residents in training in general surgery. In the main hospitals, women represent only 9% of work positions. Only 21% of university surgical teaching positions are held by women.

Conclusions: Although in our environment the possibility of admission to residency and surgical work has increased for women, based on our results there is still a large participation gap in our country. Mentoring and diversity must continue to end the gender bias in the surgical field.

Keywords: equity, general surgery, gender analysis, gender inequality, gender blind

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Carolina Maria Rodriguez Vargas,¹ Maria Paula Forero-Rios,² Valentina Noguera Morales,³ Lilian Torregrosa Almonacid,⁴ Adriana Cordoba Chamorro,⁵ Danna Julieth Ibarra Ladino,⁶ Luis Felipe Cabrera Vargas⁷

¹Department of General Surgery, Fundación Universitaria de Ciencias de la Salud, Colombia

²Department of Clinical Epidemiology and Biostatistics, Pontificia Universidad Javeriana, Colombia

³Department of Medicine, Universidad El Bosque, Colombia

⁴Department of General Surgery, Pontificia Universidad Javeriana, Colombia

⁵Department of General Surgery, Fundación Universitaria de Ciencias de la Salud, Colombia

⁶Department of General Surgery, Fundación Universitaria de Ciencias de la Salud, Colombia

⁷Department of Vascular Surgery, Military University, Colombia

Correspondence: Maria Paula Forero-Rios, MD, Department of Clinical Epidemiology and Biostatistics, Pontificia Universidad Javeriana, Colombia, Address: Cra 57 n 159-11, Tel (321) 226-5578, Email mpauforerer@hotmail.com

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Introduction

The history of women in surgery in Western civilization dates back to 3,500 BC and Queen Shubad of Ur. Ancient history reveals an active role for women in surgery in Egypt, Italy, and Greece, as detailed in surgical texts of the time. During the Middle Ages, regulations prohibited women from performing surgery unless they assumed their husbands' practices at his death or were found fit by a "competent" jury.¹⁻⁴

Subsequently King Henry VIII of England proclaimed that "No carpenter, blacksmith, weaver or woman should practice surgery." The modern period of surgery begins with women posing as men to practice medicine and surgery like Dr. Miranda Stewart with Dr. James Barry. Early women physicians like Dr. Elizabeth Blackwell and Dr. Emily Jennings Stowe and female surgeons like Dr. Mary Edwards Walker and Dr. Jennie Smillie Robertson in North America had a hard time getting a residency education after completing medical school, since they considered themselves neither fit nor skilled enough to develop a surgical profession.⁴⁻⁶

Therefore, throughout history women have been trained in different professions, each time with better job options and fields of action, which previously only belonged to men. The reasons why women choose surgery include suitable models and academic challenges mixed with a technical component. However, currently, the proportion of women in surgical training is much lower than that of women in medical school. Furthermore, it has been described that up to 66.7% of women still experience discrimination in the surgical environment. Gender bias continues to contribute in up to 25% of

women who withdraw from general surgery residency.⁷ Factors such as lack of mentoring and lifestyle issues are the biggest impediments for women to pursue surgical careers.⁴⁻⁶ Additionally, it has been shown that female surgeons offer invaluable attributes such as better doctor-patient communication and a more patient-centered approach to surgical disease.⁷ In our country, there are no previous data on the participation of women in general surgery. In this way, with the present study we want to establish the real participation of women in the general surgery residency and at the labor level in the main hospitals of the country, to obtain an initial x-ray of the gender bias in general surgery in Latin America.

Methods

The members attached to the Colombian Association of Surgery conducted a survey to investigate the participation of women in general surgery residency programs and their main university hospitals nationwide, for the second semester of 2020. The survey evaluated the following variables: academic program, university hospital, city, gender, academic position (resident) and clinical instructor (institutional surgeon of the university hospital). The data collected protects the identity of the participants, and they were informed of the purpose of the study and their participation was voluntary.

Data management and extraction

An active member of the research project downloaded the questionnaires and shared them with the other members for data analysis and discussion. Multiple entries from the same individual or members of the same surgical unit were manually searched and deleted if conflicting findings were identified.

Statistical analysis

Categorical variables were reported by counts and percentages, using Excel Office software (Microsoft Washington DC).

Results

8 postgraduate programs in general surgery, 11 hospitals in 4 capital cities of Colombia, were surveyed, for a total of 272 people surveyed. Women represent 39% of the residents undergoing training in general surgery in the country. In the country’s main hospitals, women represent only 9% of job positions. Lastly, only 21% of university surgical teaching positions are held by women. The total results of the study are discriminated in Figures 1–4.

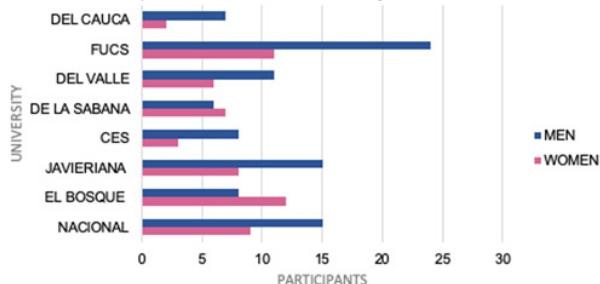


Figure 1 Gender participation in general surgery residency in Colombia 2022.

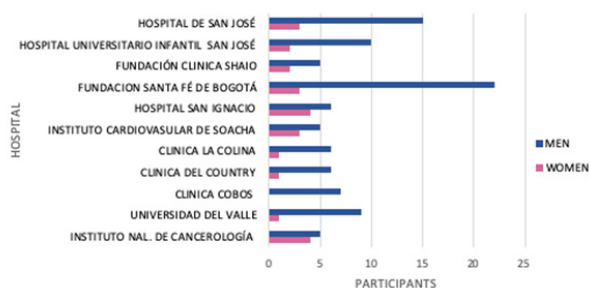


Figure 2 Gender participation in general surgery attendings in Colombia 2022.



Figure 3 Gender participation of general surgical residents in main cities of Colombia 2020.

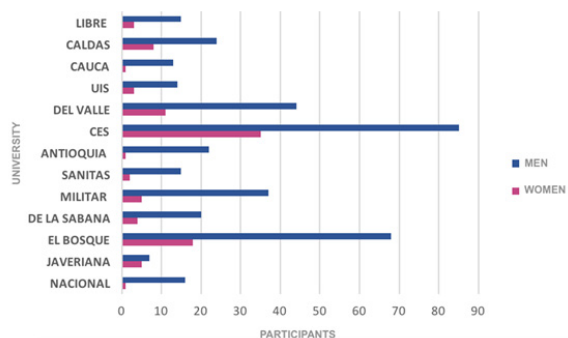


Figure 4 Gender participation in surgical education in Colombia 2020.

Discussion

Throughout history the development of women as doctors and surgeons has undergone great changes, this is how Miranda Stewart (known as James Barry in 1809) worked in Canada and Great Britain; she making great scientific contributions, posing as a man, to obtain job acceptance. In our environment the first Latin American surgeon was Eloísa Díaz I., between 1866-1950; and in Colombia it was Ana Galvis Hotz between 1855-1934; She studied Medicine in Bern, Switzerland and in Colombia she practiced her profession and she is listed as the first Colombian specialist in Gynecology, also with practices in General Surgery.⁸⁻¹¹ Given the lack of data on the percentage of women in residency and in the general surgery field of work in our country, the authors decided to carry out this first national survey. This study showed a percentage of participation of women below 40% in academic training programs in general surgery.

We have figures close to 117 million women in Latin America and the Caribbean included in the labor market. Female labor participation went from 20 to 65% and this must be highlighted; however, the jobs that are added to this figure are not ideal, given the informality, low monetary remuneration, abuse, lack of protection, job instability, and lack of quality. Added to this, we must not forget the large social gaps between Latin American countries, including household size, educational level, and geographic distribution. There is evidence that 16% of the population of women in Latin America would improve their employment option if the generation gap were closed.¹¹⁻¹³ In this study, we found that in the country’s main hospitals, women represent only 9% of job positions in general surgery.

This panorama has been slowly changing, the participation of women in medical schools did not exceed 6% in 1970, and for admissions to surgery, The American College of Surgeons only accepted up to 5 women per year, until 1975. By the year 1970, women constituted 5% of physicians in the United States, which improved in 2001, when they already represented 24%. Admission to medical schools in Western culture is not a problem for women, approximately 50% of entering students are female, which is similar to other occupations previously considered exclusively for men. In fact, the number of women doctors has increased, reaching the same level as men. Traditionally, surgery has always been a “male” specialty, however, this concept has been changing over time, which is represented in the following world statistics on surgical specialties in different countries.¹⁴⁻¹⁷ where in the western hemisphere we can find Brazil with 16.6% according to the Association of Women Surgeons,¹⁸ in Argentina 15.5%,¹⁹ in the United States 24%, and finally in Canada 29.3% according to Census Metropolitan Area . In this study, an overall participation of women in general surgery of 26.5% was found. On the other hand, in the eastern hemisphere.²⁰⁻²³ we can see that in England the female representation is 27.2% according to the National Health Service (NHS), in Australia 12%, in Norway 10%, in Japan 7.2% according to the Japanese Society of Surgery, in India 2.8% according to Women Surgeons and finally in Ireland they represent only 10% according to the Royal College of Surgeons of Ireland. In figure FIG 1, we can see how, comparing our results globally, the participation of women in surgery in our country is at the level of high-income countries such as Canada, the United States and England. Although the trend towards the inclusion of women in the surgical field has been improving, as in the United Kingdom, where an increase in participation of 13.3% has been shown from 1990 to 2020.¹⁶ However, there is still a large inequality gap in terms of participation figures, as demonstrated by the NHS report, where in 2018 female surgeons in England represented only 24% vs. 73% men.^{24,25} According to a

study by the University of Massachusetts, 36% of the residents are women,²⁶ a similar result to the percentage of female residents in our study, however we are 2% above the reported (Figure 5).

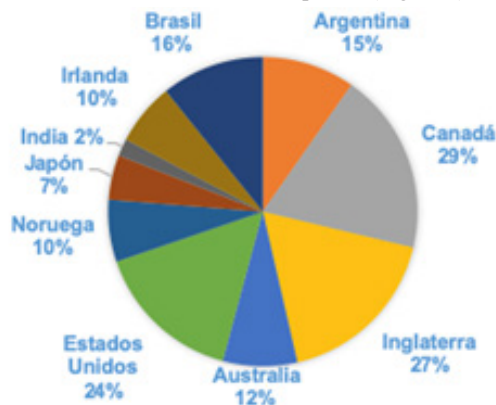


Figure 5 Women participation in surgical specialties worldwide.

The participation of women in surgery has increased notably, despite the fact that their presence is more related to other specialties, as Peckham demonstrated in 2017, such as Gynecology and Obstetrics, where they are more prevalent at 56%, followed by Pediatrics at 53%. , Dermatology with a 44% participation along with Psychiatry and Pathology with 40%. Similarly, in surgical specialties, there has been an increase in the participation of women such as Vascular Surgery, which since 2013 has shown an increase of 3.5%, General Surgery 3%, Orthopedics and Traumatology by 1.1%, Neurosurgery by 0.7% along with Plastic Surgery at 1.8% in the United States according to the American College of Surgeons.²⁶ Results that agree with the 38.1% participation of women in surgical residency programs in our country.

Similarly occurs in Australia, where the participation of resident women has increased from 7.7% to 9.8% between 2009 and 2015. Although there is greater participation of women in surgical areas, the participation of men worldwide continues to be lower, noticeably higher, as in the UK. Especially in the area of urology where they represent 77% and in orthopedics 78.9%.²⁷ A similar trend occurs in Canada, with percentages of women of 11.2% and 12.2% respectively in the same specialties.

This study has some limitations since all the hospital centers where there are general surgery services were not evaluated. However, it should be noted that the data reported are estimates based on the best available data from each training center or program. In addition, we do not have previous data to be able to make a historical comparison of the percentage of inclusion of women in general surgery in Colombia. However, this study evaluated the participation of women in the residency and work environment of general surgery in our country and it is possible to obtain important information in the face of a previously unvalued problem such as gender bias in surgery. These data may be useful to establish future actions to reduce the gap of women in surgical services.

Acknowledgments

Although in our environment, the possibility of entering a residence and the surgical labor scenario for women has increased, based on our results there is still a large gap of inequality of participation in our country. Gender diversity in general surgery is an issue that has only just entered our country, so variables that influence the decision to enter a postgraduate course in general surgery such as age, marital status, work experience, among others, should be evaluated.

Therefore, mentoring and diversity must continue to be promoted in all general surgery academic services, not only in Colombia but in Latin America, to put an end to the specter of gender bias in the surgical field.

Declaration of interest statement

The authors report there are no competing interests to declare.

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