Participation of Women at the Societal and Institutional Level in the Asociación Argentina de Ortopedia y Traumatología

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ABSTRACT

Objective: To analyze the representation of women at the societal level within the Asociación Argentina de Ortopedia y Traumatología (AAOT). **Materials and Methods:** An observational and descriptive study was conducted analyzing data obtained from the period between January 1, 2015 and December 31, 2019. The proportion of women members of the AAOT, as well as their participation at the institutional, hierarchical, and academic levels, was assessed. **Results:** Women represent 10.6% of all AAOT members. Twelve women actively participate in the different Committees of the Association, which represents 16% of the total number of members. During the study period, 2.8% of the positions on the Board of Directors were held by women. In the history of the AAOT, only one woman has served as President. In 2019, women made up 6.9% of teachers who taught the Biannual Official National Orthopedics and Traumatology Certification Course. **Conclusion:** Women represent 10.6% of AAOT members. Knowing their situation within the AAOT allows laying the foundations to implement measures aimed at improving equity in Orthopedics and Traumatology.

Keywords: Women in Orthopedics and Traumatology; female representation; diversity in Orthopedics and Traumatology.

Level of Evidence: IV

Participación de la mujer a nivel societario e institucional en la Asociación Argentina de Ortopedia y Traumatología

RESUMEN

Objetivo: Analizar la representación de la mujer a nivel societario dentro de la Asociación Argentina de Ortopedia y Traumatología (AAOT). **Materiales y Métodos:** Se realizó un estudio observacional y descriptivo analizando datos obtenidos del período entre el 1 de enero de 2015 y el 31 de diciembre de 2019. Se evaluó la proporción de mujeres que son miembros de la AAOT y su participación a nivel institucional, jerárquico y académico. **Resultados:** La mujer representa el 10,6% de todos los miembros de la AAOT. Doce mujeres participan activamente en los diferentes Comités de la Asociación, lo que representa un 16% del total de los integrantes. Durante el período de estudio, el 2,8% de los cargos de la Comisión Directiva fueron ocupados por mujeres. Una mujer fue Presidenta en la historia de la AAOT. En 2019, el 6,9% de los docentes que dictaron el Curso Oficial Nacional Bianual de Certificación de Ortopedia y Traumatología fueron mujeres. **Conclusión:** La mujer representa el 10,6% de los miembros de la AAOT. Conocer su situación dentro de la AAOT permite sentar las bases para implementar medidas orientadas a mejorar la equidad en la Ortopedia y Traumatología.

Palabras clave: Mujer en Ortopedia y Traumatología; representación femenina; diversidad en Ortopedia y Traumatología.

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INTRODUCTION

The representation of women in medicine has been progressively increasing in the world, but this increase is not reflected equally in the different specialties.[1-3] The surgical specialties have the lowest female representation. In turn, if we analyze the increase in the percentage of women over time within the surgical specialties, orthopedics lags behind in comparison with the rest.[4,5] In 2008, data from the United States *Accreditation Council for Graduate Medical Education* (ACGME) indicated that Neurosurgery, Orthopedics and Traumatology, and Thoracic Surgery had the lowest percentage of female residents (11%, 12%, and 13%, respectively).[5,6] A decade later, the percentage of women residents in Neurosurgery increased to 18%, that of Thoracic Surgery doubled to 26%, while in Orthopedics and Traumatology it only increased by 3% and reached 16%.[5-7] On the other hand, women represent 6% of all active traumatologists in this country.

The importance of diversity has been widely validated in various disciplines. Diversity in medicine improves communication, patient satisfaction and access to care for patients with fewer resources.[8] On the other hand, it is essential to create strong organizations that maximize the talents and abilities of their members. Organizations that include diversity attract the most capable professionals, increase innovation, and exhibit better quality decision-making. In the fields of medicine, business, and politics, the critical mass to consider that a group's diversity is effective is between 25% and 30%.[9] The importance of diversity in the specialty of orthopedics and traumatology has recently been addressed internationally, and the *American Association of Orthopedic Surgeons* (AAOS) made this one of its strategic objectives for the period 2019-2023, with the election of the first female president in 2019.[3,10]

In Argentina, female representation in Orthopedics and Traumatology today is 13% in the residency system[11] and there are no reports that analyze this issue at the institutional level within the Asociación Argentina de Ortopedia y Traumatología (AAOT).[12] The objective of our study was to analyze the representation of women at the institutional level in the AAOT. The secondary objective was to analyze the participation of women in the different institutional strata (academic participation, participation in hierarchical positions, etc.).

MATERIALS AND METHODS

An observational and descriptive study was carried out to characterize the participation of women in the AAOT. The study was conducted by analyzing data obtained from a period between January 1, 2015 and December 31, 2019. Information was obtained from the administrative area of the AAOT by requesting permission from the Board of Directors.

The primary objective of the study was to assess the proportion of women who are members of the AAOT. Our secondary objectives were: 1) to determine the proportion of women who opted for Full Membership in the AAOT between 2015 and 2019; 2) to determine the proportion of women who perform functions within the AAOT's various hierarchical strata (participation in committees, Board of Directors, Presidency); 3) to determine the proportion of women who actively participate as lecturers in the Biannual Course as of December 2019; and 4) to determine the percentage of female heads of service in the AAOT-accredited services up to December 2019.

The following data were collected:

- Number of female AAOT members out of the total number of members up to December 2019.
- Number of female members that are part of Committees within the AAOT out of the total number of participants in the Committees up to December 2019.
- Number of female members who were part of the Board of Directors during the period 2015-2019 out of the total number of participants in the Board.
- Number of female AAOT Presidents and the total number of AAOT Presidents throughout its history.
- Number of women who actively participated as lecturers in the Biannual Course over the total number of lecturers in the course up to December 2019.
- Number of female Heads of Service within the AAOT Accredited Services in relation to the total number of Heads of Service positions within the AAOT Accredited Services up to December 2019.

RESULTS

The AAOT has 5,746 members, 612 are women, which represents 10.65% of the members. Among the female members, 124 are Residents (20.26%), 127 are Adherent Members for less than 10 years (20.75%), 227 are Adherent Members for more than 10 years (37.09%), 114 are Certified Members (18.62%), 18 are Full Members (2.9%), one is an Honorary Member (0.16%), and one is a Life Member (0.16%).

During the period 2015-2019, 89 members opted to be full members of the AAOT. Seven were women, this represented 7.8% of the total applicants and 1.4% of all female members; and 82 were men, 92.2% of all applicants and 1.5% of all male members.

The 10 committees that work in the AAOT are made up of 75 professionals, 12 of them are women, which represents 16% of the total.

The AAOT Board of Directors is made up of 13 or 14 members who hold office for one year. Between 2015 and 2019, the Board of Directors had two female members (2.8% of the total) out of 71 positions. Both were members of the 2018 Board of Directors, which had a total of 13 positions (15.3%).

From its founding to December 31, 2019, the AAOT has had 67 presidents, Dr. Sara Satanowsky was the only woman to hold the position between 1952 and 1954.

During 2019, 72 lecturers taught the Official National Biennial Certification Course in Orthopedics and Traumatology, five of them were women (6.9% of the lecturers).

The AAOT had accredited 135 Orthopedics and Traumatology Services in the country as of December 2019. Four women were Heads of Service (3%) and worked in the provinces of Buenos Aires, Córdoba, Chaco, and Neuquén.

DISCUSSION

Women represent 10.65% of the members of the AAOT. Out of a total of 5,746 members, 612 are women. These results are comparable with those of international institutions. In 2018, the *Canadian Orthopedic Association* (COA) reported that 17.6% of its members were women, and 11.6% of its members were active practicing Orthopedic and Trauma specialists.[13] Women orthopedists, on the other hand, make up 6.5% of the AAOS membership.

Medicine has undergone a steady feminization process in recent years, with an increase in the number of women studying and practicing this profession, which is not reflected in the distribution of women in our specialty. According to 2019 data released by the Department of University Information of the National Ministry of Education, the participation of women in medical schools represented 69% of new enrollees and 65% of new graduates.[14] On the other hand, according to the results of the 2011 Census, the number of women admitted to the Medical Residency System of the Autonomous City of Buenos Aires increased from 58% to 66% in 2012.[1] However, women residents of Orthopedics and Traumatology represent only 13% of residents in Argentina, according to a study conducted by Cafruni et al.[11] These values are comparable to those published in the United States, where female medical trainees had reached parity in medicine with their male colleagues in 2001,[5] but female Orthopedic and Trauma trainees accounted for less than 14% of all medical residents in the period 2016-2017,[3] and currently make up 16.1%.[6] Increasing the number of women in surgical specialties is a challenge, especially in Orthopedics, a specialty in which the percentage of women has remained relatively the same over the past decades.

Orthopedic surgery is the least gender-diverse specialty recognized by the US ACGME.[6,15] According to the most recently published AAOS data, 6.5% of orthopedic surgeons are actively working in the profession, which is substantially below the 34% of all practicing physicians.[6,15] The importance of diversity (race, gender, sexual orientation, etc.) has been well documented in a variety of disciplines.[16] Diversity in work groups as well as in leadership positions improves productivity by bringing a broader perspective and an innovative approach that leads to improved patient satisfaction and clinical outcomes. In turn, the presence of new women leaders acts as a catalyst for positive change in all areas of the specialty, including promoting diversity and inclusion from a broader perspective; defending salary and academic equality, addressing issues such as well-being and job exhaustion, among others.[17] The need for diversity in medicine has been recognized by both the ACGME and the AAOS as a vital component in ensuring the delivery of quality, culturally competent care to patients.[10]

A series of factors must be examined in order to explain women's lack of interest in the Orthopedics and Traumatology specialization. Initially, this can be explained by the term "horizontal segregation", which refers to the low representation of women in certain medical specialties.[18] Women generally favor specialties traditionally associated with care roles considered "feminine", such as Pediatrics, Family and Community Medicine, Clinical Medicine, and Mental Health. On the other hand, specialties considered "masculine", for example, General Surgery, Traumatology and Neurology, continue to be exercised mainly by men.[18] On the other hand, the low exposure to the subject during medical training may represent another barrier in choosing this specialty. In this sense, Bernstein et al.[19] reported that exposure to mandatory musculoskeletal medicine in college led to a 12% increase in overall Orthopedics and Trauma residency applications, much more pronounced among women (75%). In turn, Baldwin et al.[20] prospectively analyzed factors that affect interest in the specialty on the part of medical students. In the case of women, the factor that was most correlated with interest in the specialty was personal exposure to the specialty during training, either by attending classes or by accessing literature related to the subject, and the exposure to Orthopedics and Traumatology aside from college. Furthermore, the detracting factors in the choice of the specialty were the long working hours, the physical demand and the male predominance.[20] The latter leads to stressing the importance of role models, and tutoring and mentoring to favor the choice of the specialty and demolish existing myths in relation to it.[17] The absence of a "critical mass" of female traumatologists may represent another barrier that contributes to medical students not choosing the specialty. Van Heest et al.[7] studied the differences in the distribution of women among the various Orthopedics and Traumatology residency programs in the United States and discovered that places where women made up more than 20% of the residents had a high proportion of women in leadership positions on the faculty.

The leadership of specialized societies should ideally link a percentage of women on the board of directors with a percentage of membership. Saxena et al.[21] analyzed the relationship between the proportion of women in leadership roles in specialized societies and their gender composition. They found a strong correlation between the percentage of women in a society and the percentage of women on its board of directors. However, this correlation is not linear (societies with higher percentages of female members and higher percentages of women on boards of directors) and was not related to the presence of women in junior member positions.[21] Within the AAOT, 16% of the members of the different committees are women, but of the total positions on the Board of Directors in the study period, only 2.8% were held by women. Only one woman has held the position of President in the history of the AAOT. On the other hand, within the 135 AAOT Accredited Services in the country, only four Service Head positions are held by women (4%).

The so-called "pipeline theory" (i.e., the lowest gross number of female authors in academic medicine and in leadership positions is due to the lower gross number of women in the practice of the specialty) has been proposed as the only explanation for the persistent discrepancies in an attempt to explain the low representation of women in leadership positions and the difficulty in advancing in academic medicine.[22] On the other hand, some authors suggest that the predisposition of women to leave their practice to start a family contributes to this plateau in academic growth and in their arrival at hierarchical positions.[23] In the United States, the most important research grants that will contribute to the academic advancement of the professional are usually awarded in the first decade of the career and this often coincides with the childbearing age of the woman.[22] However, interpreting these variables as the only justification is to simplify an otherwise complex situation. Rather, this topic involves a number of barriers. Subjective barriers are challenging to study scientifically since they are not entirely tangible and thus difficult to objectify.

The implicit bias linked to gender "vertical segregation" refers to the unbalanced distribution at different levels of activity and the concentration of women in positions of low responsibility.[18] There is a low representation of women in senior professional, academic and union positions. If we analyze women's participation in the Argentine university system in 2020, we see that, while there is parity in the number of teachers at all levels (full professor, associate professor, adjunct, etc.), women make up 35% of Deans and 11% of Rectors/Presidents.[14] This is even more marked in other countries of America. According to the *American Association of Medical Colleges* (AAMC) 2014 data on the distribution of the faculty of medical schools in the United States in relation to gender and rank, women represent 27.5% of the Instructors, 19.5% of Assistant Professors, 13.6% of Associ-

ate Professors and 6.8% of Full Professors. The proportion of women in higher academic levels has increased very slowly and is inversely proportional to the rank of the position.[23] In the AAOT's Official National Biannual Certification Course in Orthopedics and Traumatology, in 2019, there were five women lecturers, which represented 6.9%.

Other factors that have been identified as barriers to women's advancement in academic and hierarchical levels include difficulties in obtaining and maintaining relationships with academic mentors or sponsors (defined as a superior proposing a professional for a leadership position) and disparities in research grant allocation.[22,24] In turn, the presence of microaggressions and experiences of intimidation or harassment can influence and negatively impact women's careers.[24] Impostor syndrome is a psychological term understood as the fear of being exposed as a fraud as expectations and responsibility increase. The person expresses doubts about their achievements and abilities, despite factual evidence to the contrary. It is more prevalent in ambitious people, women, and racial, ethnic, and religious minorities.[22,24] All of these mentioned factors suggest and contribute to a "leaky pipe" in the advancement of women in academic medicine. Traditionally, the term "glass ceiling" has been used to refer to invisible but effective barriers that limit women's advancement in organizations to a given level in the hierarchical scale. Today, however, the concept of a "maze" is favored, recognizing that women are not barred from achieving the highest positions, but that they must overcome various difficulties and travel difficult paths to do so.

In 2018, the *American College of Physicians* (ACP) announced its dedication to achieving gender equality in medical compensation and career advancement, and the AAOS made diversity one of its 2019-2023 strategic goals. When a vulnerable minority reaches "critical mass" (the critical size of a group to initiate social change), the social system reaches a tipping point in which the minority's influence over the group becomes significant. Values of 25% to 30% have been proposed to reach this point.[15] Furthermore, understanding that this change must be implemented collaboratively is critical. Men are essential allies for diversity, and it is crucial that they embrace the mission to diversify orthopedic surgery in order to retain quality in patient care and fight for thought diversity. Several strategies have proven to be effective in achieving this change: 1) early exposure to the specialty; 2) addressing educational gaps; 3) tutoring; 4) the presence and interaction in the faculty of women and minority groups; and 5) the development of a culture or institutional network that supports women and minority physicians.[25] In the United States, initiatives such as the "Pipeline Initiative" and the mentoring programs and exposure to the specialty run by the "Perry Initiative" (non-profit organization) are carried out to achieve an increase in the recruitment of women and minorities to the specialty.[25] There are also numerous organizations focused on women and other minorities around the world today. These strategies and organizations seek to change attitudes and myths in relation to the specialty in order to attract the best students, regardless of gender.[4]

The main limitation of our analysis, which is observational and cross-sectional, is that it can only describe trends and cannot establish the causes of women's poor participation at the academic and hierarchical levels. However, we believe that knowing the current situation of women in the AAOT will allow us to lay the foundations for subsequent analysis.

CONCLUSION

Women represent 10.6% of the active members of the AAOT. Knowing the current situation regarding the proportion of women in the association, as well as their participation in academic areas and in hierarchical positions, allows us to make the situation visible and provide the foundation for carrying out action plans and implementing measures aimed at improving equality in the specialty.

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