



## Gender disparity in ICU staffing in Argentina

Elisa Estenssoro<sup>a,\*</sup>, Cecilia I. Loudet<sup>a</sup>, Rosa Reina<sup>a</sup>, Analía Fernández<sup>b</sup>, María Gabriela Vidal<sup>a</sup>

<sup>a</sup> Servicio de Terapia Intensiva, Hospital Interzonal de Agudos San Martín de La Plata, La Plata, Buenos Aires, Argentina

<sup>b</sup> Servicio de Terapia Intensiva Pediátrica, Hospital de Agudos Carlos D. Durand, Ciudad Autónoma de Buenos Aires, Argentina

### ARTICLE INFO

#### Keywords:

Gender gap  
Gender disparities  
Gender inequities  
ICU staffing  
Gender pay gap

### ABSTRACT

**Purpose:** Gender disparities in healthcare are striking, notwithstanding an increase in female students and physicians. Underrepresentation of women in leadership positions is well-documented; however, information from low and middle-income countries (LMICs) is still sparse. The Argentinian Society of Intensive Care Medicine (SATI) aimed to characterize the gender composition in Argentine ICUs.

**Methods and results:** Between 8/1/2018 and 1/1/2019, 131 questionnaires were submitted to ICU Department Chairs of SATI research networks. Gender distribution of the different staffing levels, board certification and hospital characteristics were recorded.

One-hundred and four were completed, including 2186 physicians; 44% were female. Female participation decreased with highest responsibility: only 23% of Department Chairs were female ( $P = .002$  vs. the rest of the staffing categories, adjusted for multiple comparisons). Residents exhibited the highest proportion of female physicians (47%). Board certification was similar for both sexes (62.3% vs. 62.2%,  $P = .97$ ). Female/male distribution in public and private hospitals was 47%/53% and 40%/60% ( $P < .01$ ), respectively.

**Conclusion:** Our data provide evidence of an important gender gap in ICU management in a LMIC. Women were poorly represented in the leadership positions, although qualifications were similar to men. Moreover, female physicians worked more frequently in the public health subsector, usually underfinanced in LMICs—a surrogate of a gender pay gap.

© 2019 Published by Elsevier Inc.

### 1. Introduction

Feminization in the medical profession is well-recognized; however, this phenomenon has not been associated with an increase in the presence of women in academic or medical leadership positions. This state of gender inequity has been attributed to women being pigeonholed into traditional female roles of motherhood and domestic responsibilities, representing barriers to progress across successful professional trajectories and, hence, interfering with academic productivity [1]. Unconscious or explicit gender bias favoring men also affects gender disparities [2].

In 2014 in Argentina, 73.1% of medical students and 51.3% of physicians were female [3]. The rate of feminization varied, however, according to medical specialty. Fields related to childbearing and childcare, roles traditionally associated with women - such as gynecology,

obstetrics and pediatrics - were predominantly chosen by female physicians, therefore reinforcing gender stereotyping [4].

With respect to critical care medicine, the proportion of female intensivists across the world spans from 26 to 50% (mean 37%), but data from low and middle-income countries (LMICs) is uncertain [5]. In Argentina, an upper-middle income economy, female representation in the ICU and its distribution across different staffing levels are presently unknown. To address this issue, the Argentinian Society of Intensive Care Medicine (SATI) launched an online questionnaire to address the situation.

### 2. Methods

The questionnaire was sent to the Department Chairs of ICUs participating in SATI research networks via e-mail between August 1, 2018 and January 15, 2019. ICU characteristics and type of hospital were recorded. ICU staffing levels were labeled as: Department Chair, Deputy Department Chair, assistant physicians, on-duty physicians, and residents. Board-certification (excepting residents) was recorded. Gender distribution for these different titles was collected.

Data are presented as percentages and mean  $\pm$  SD; differences are explored with  $\chi^2$ . A P level  $< 0.05$  was considered significant; the Bonferroni adjustment was applied for multiple comparisons.

*Abbreviations:* ICU, Intensive Care Units; SATI, Sociedad Argentina de Terapia Intensiva (Argentinian Society of Intensive Care Medicine); ESM, Electronic Supplemental Material; LMICs, Low and middle income countries.

\* Corresponding author at: Servicio de Terapia Intensiva, Hospital Interzonal de Agudos San Martín de La Plata, Calle 42 No.577, 1900 La Plata, Buenos Aires, Argentina.

E-mail address: [estenssoro.elisa@gmail.com](mailto:estenssoro.elisa@gmail.com) (E. Estenssoro).

Since survey participation was voluntary, informed consent is assumed; however, each local ethics committee established its requirement.

### 3. Results

Of the 131 questionnaires submitted, 104 were completed (79.3%), representing 8.5% of the 1217 ICUs in Argentina; 2186 physicians were included; 44% were female. Some ICU characteristics are shown in Table 1 ESM.

The distribution of the staffing levels by gender is shown in Fig. 1 and Fig. 1 ESM. Remarkably, female representation decreased at the highest level: only 23% of Department Chairs were female ( $P = .002$  vs. all categories). Residents exhibited the highest proportion of female physicians (47%).

Board-certification was similar for both sexes (62.3% vs. 62.2%,  $P = .97$ ).

Female/male distribution in public and private hospitals was 47%/53% and 40%/60% ( $P < .01$ ), respectively (Fig. 2 ESM).

### 4. Discussion

The literature on gender disparities in critical care medicine is gradually beginning to emerge and evidences profound inequities. In this male-predominant specialty [6], female intensivists only represent 5–26% of speakers at top international conferences [7], 13% of members of task forces created for coining definitions or issuing clinical guidelines [8], and between 7 and 29% of board members of major intensive care medicine societies—with the exception of the Society of Critical Care Medicine, with 50% female representation [9]. In Argentina, 32% of SATI board-members are female; and since its foundation in 1972, there has only been one female president [10]. This rather uniform panorama in leadership positions fails to mirror the diversity of the multi-disciplinary, multiethnic community practicing critical care medicine worldwide.

Our pilot study evidences that female participation in Argentine ICUs lies within the figures globally described, slightly exceeding the 37% and 32% recently found in Latin-America [5,11]. Still, the proportion remains low, given the total population of female physicians in Argentina, probably reflecting the unappealing lifestyle attributed to critical care medicine. Across staffing levels analyzed, a steep drop in female representation occurs in ICU Department Chairs, evidencing once again the gender gap in leadership positions widely reported [5,8]. To our knowledge, this is the first study to record the proportion of female ICU Department Chairs. The American Association of Medical Colleges reports 15.4% women as permanent Department Chairs for all specialties in the United States [12].

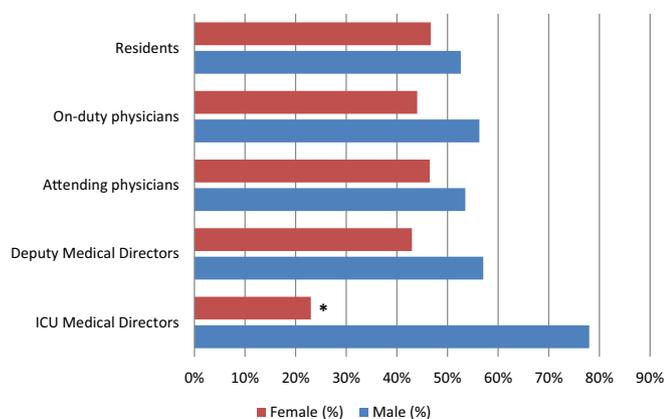


Fig. 1. Gender distribution in each staffing category in 104 Intensive Care Units in Argentina.

As residents exhibit the highest proportion of female ICU physicians overall, it stands to reason that the number of females in management roles will rise accordingly in the future provided that strategies of continued recruitment and retention are implemented [6]. Another example of gender disparity is pay gap. We did not measure income directly, but it is well-documented that the public health subsector is currently underfinanced in Latin America [13]. Accordingly, salaries in private hospitals are considerably higher in Argentina. In our study, these positions were more frequently occupied by male intensivists, notwithstanding similar academic achievements.

Different strategies have been proposed to reach gender equality: developing mentorship programs which incorporate mentors from different contexts; promoting illustrious women and fostering their interaction with young mentees; establishing a female quota on editorial and scientific society boards, task forces and scientific conferences; generating educational activities to identify implicit gender bias, among other activities [7,8]. Within the rigid ICU organizational structure, having a more flexible approach to work timetables, such as scheduling shorter shifts, longer parental and family-care leave, and accommodating nursing mothers [6] would certainly aid in retaining female intensivists within the specialty. From a broader viewpoint, the gender perspective should be integrated into medical curricula early in order to train future physicians in the principles of sex- and gender-based differences in health and disease [14] and support gender equity in medical faculty [15].

A limitation of this study is the high risk of selection bias given that participation was voluntary—implicit in all questionnaires; moreover, 20.7% had no response. Therefore, our sample might not reflect an accurate picture of the gender gap in Argentine ICUs. Additionally, we did not record data on individual physicians.

In summary, our data provide evidence of an important gender gap in management and leadership positions in a LMIC ICU. The uneven gender distribution in health subsectors might be a marker of gender pay gap given that a higher percentage of female physicians work in public hospitals.

### Conflict of interest statement

On behalf of all authors, the corresponding author declares no conflict of interest.

### Financial disclosure statement

This study was not funded.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jcrc.2019.05.016>.

### References

- [1] Sreedharan R, Perez-Proto S. Women in critical care medicine Available from: <https://www.sccm.org/Communications/Critical-Connections/Archives/2017/Women-in-Critical-Care-Medicine>. Accessed February 6, 2019.
- [2] Morgan AU, Chaiyachati KH, Weissman GE, Liao JM3. Eliminating gender-based bias in academic medicine: more than naming the "elephant in the room". *J Gen Intern Med* 2018;33(6):966–8.
- [3] Binstock G, Cerrutti M, Magariños P, Lopreite D. Género en el trabajo: brechas en el acceso a puestos de decisión. 1a Edición. Aportes para el desarrollo humano en Argentina. Buenos Aires: Programa de las Naciones Unidas para el Desarrollo (PNUD); 2014 Available from: [http://www.ar.undp.org/content/dam/argentina/Publications/Desarrollo%20Humano/PNUD%20ARGENTINA%20\\_Aportes\\_8.pdf](http://www.ar.undp.org/content/dam/argentina/Publications/Desarrollo%20Humano/PNUD%20ARGENTINA%20_Aportes_8.pdf) [Accessed December 20, 2018].
- [4] Catterberg G, Duré I, Bustos JM, Langsam M, Salzman M. Género en el sector salud: feminización y brechas laborales. Aportes para el desarrollo humano en Argentina. Buenos Aires: Programa de las Naciones Unidas para el Desarrollo (PNUD); 2018 Available at: [http://www.ar.undp.org/content/dam/argentina/Publications/Desarrollo%20Humano/PNUD\\_InformedeGenero\\_2018.04.04.pdf](http://www.ar.undp.org/content/dam/argentina/Publications/Desarrollo%20Humano/PNUD_InformedeGenero_2018.04.04.pdf) (Accessed December 20, 2019).

- [5] Venkatesh B, Mehta S, Angus DC, Finfer S, Machado FR, Marshall J, et al. Women in Intensive Care study: a preliminary assessment of international data on female representation in the ICU physician workforce, leadership and academic positions. *Crit Care* 2018;22(1):211.
- [6] Parson Leigh J, de Grood C, Ahmed SB, Ulrich AC, Fiest KM, Straus SE, et al. Towards gender equity in critical care medicine: a qualitative study of perceived drivers, implications, and strategies. *Crit Care Med* 2019;47(4):e286–91.
- [7] Mehta S, Rose L, Cook D, Herridge M, Owais S, Metaxa V. The speaker gender gap at critical care conferences. *Crit Care Med* 2018;46(6):991–6.
- [8] Mehta S, Burns KEA, Machado FR, Fox-Robichaud AE, Cook DJ, Calfee CS. Gender parity in critical care medicine. *Am J Respir Crit Care Med* 2017;196(4):425–9.
- [9] Modra LJ, Yong S, Austin DE. Women in leadership in intensive care medicine. *ICU Manage Pract* 2016;16:174–6.
- [10] Castro R, Nin N, Ríos F, Alegría L, Estenssoro E, Murias G, et al. The practice of intensive care in Latin America: a survey of academic intensivists. *Crit Care* 2018;22(1):39.
- [11] Sociedad Argentina de Terapia Intensiva Comisión Directiva Available from: <https://www.sati.org.ar/index.php/institucion/comision-directiva>. Accessed January 30, 2019.
- [12] Association of American Medical Colleges. The state of women in academic medicine: The pipeline and pathways to leadership; February 7, 2019; 2015–6 Available from: <https://www.aamc.org/download/481198/data/2015table9a.pdf> Accessed.
- [13] Cotlear D, Gómez-Dantés O, Knaul F, Atun R, Barreto IC, Cetrángolo O, et al. Universal health coverage in Latin America 2. Overcoming social segregation in health care in Latin America. *Lancet* 2015;385(9974):1248–59.
- [14] Miller VM, Kararigas G, Seeland U, Regitz-Zagrosek V, Kublickiene K, Einstein G, et al. Integrating topics of sex and gender into medical curricula—lessons from the international community. *Biol Sex Differ* 2016;7(Suppl. 1):44 [eCollection 2016].
- [15] Zimmerman JJ, Bailey H. Moving toward gender equity in critical care medicine. *Crit Care Med* 2019;47(4):615–7.