Short Communication

Surgical education in the COVID-19 era: What did the general surgery residents’ report in Argentina leave us? Part 2

María S. Ponce Beti, Rafael Pereyra Ferrero, Gonzalo M. Bono, Lucas Panichelli, Julian E. Liaño, René M. Palacios Huatuco

A R T I C L E   I N F O

Keywords:
- Pandemic
- Medical education
- Gender bias
- Resilience
- Virtual learning

A B S T R A C T

Social distancing to curb the COVID-19 pandemic has impacted medical and surgical education. This health crisis led us to raise doubts, controversies, and dilemmas in health care in general, and in surgery in particular, understanding that residents are possibly as or more vulnerable than all health professionals. During the 32nd International Congress of General Surgery in Córdoba, which was the first general surgery congress held in Argentina during 2021; The Association of Residents and Concurrent Surgery of Córdoba presented its official report about the current challenges faced by residents during their surgical training.

1. Introduction

In April 2021, during the social, preventive and mandatory isolation due to the COVID-19 pandemic in Argentina, the 32nd International Congress of General Surgery of Córdoba was held. In this event with a hybrid format, the Association of Residents and Concurrent Surgery of Córdoba, presented its report about the generational change in surgery and burnout, the role of a female surgeon, technology as an essential tool for training and how the residences should be adapted in an uncertain social and epidemiological context.

2. The figure of a surgeon today: Women in the workforce

For several centuries the female gender has fought for a place in medicine and later in surgery, crossing great obstacles [1]. Gender biases, assaults, discrimination, and intolerant environments of sexual harassment cumulatively contribute to creating a challenging workplace for female surgeons [2]. Women have been positioned in society as “different”, marking an inequality in the different roles to fulfill; thus providing a paradox for them in the field of surgery. Such is the case of women like Elena de Cespedes, who was born around 1546 in Spain, considered the first surgeon in history. She lived with the threat of being expelled from her profession and fought to obtain a surgeon’s license. In our country, Cecilia Grierson was the first Argentine doctor, graduated in 1889 from the Faculty of Medical Sciences of the University of Buenos Aires. However, her time at the university was accompanied by a hostile environment and barriers after graduation [3].

At present, the majority of students who graduate from medical school are women, but their insertion in the field of surgery is still questioned. Although the proportion of women who enter general surgery residences has increased to 32% in 2008, no parity is expected until 2028 [4]. In a recent analysis, carried out during the COVID-19 pandemic in Argentina, we found that the number of women in residences with surgical programs was slightly lower compared to men (40.6% vs 59.4%) [5].

In a survey carried out by the Association of Women Surgeons to senior residents and members of the medical school, they reported that 50% of women mentioned experiencing sexual discrimination and 38.5% reported that gender is a barrier to career progress [1]. In view of these challenges, it is not surprising that female surgical residents are 60% more likely to experience burnout10 and nearly 25% leave the residence during the fourth year compared to 17% of males [6]. There is also a biological prejudice by delaying pregnancy due to their career, with risks of decreased fertility and increased complications.

* Corresponding author. Universidad Católica de Córdoba, Oncativo 1248, Córdoba, X5004FHP, Argentina.
E-mail address: manuepalacios.huatuco@gmail.com (R.M. Palacios Huatuco).

https://doi.org/10.1016/j.amsu.2021.102684
Received 21 June 2021; Received in revised form 29 July 2021; Accepted 3 August 2021
Available online 9 August 2021
2049-0801/© 2021 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY license
of pregnancy (Fig. 1). The fact that a woman’s fertility coincides with the time of formative surgical training, leads to postponing her personal priorities [7]. It was reported that 79% of general surgery residents identified pregnancy as a professional obstacle 15 and 30% suggest to medical students not to enter a surgical residency [8]. It was also shown that female surgeons have fewer children in contrast to the male professionals and 40% do not have them [9]. After the training stage, progress and academic leadership continue, which is another barrier to the professional growth of female surgeons. This is how positions within professional societies, on editorial boards, and participation in social gatherings are vital for academic promotion and advancement within the specialty. Although the proportion of moderate women in academic surgery conferences increased from 31% to 43% in 2019, the percentage of women in that position remained stagnant at approximately 30% [10]. They also experience discrimination in the fields of research and publication, both are the cornerstone of academic success. Table 1.

For many years, women have made important contributions to surgical services and surgical societies. However, this did not qualify them for greater representation in leadership circles. Thus, associations and committees began to be created, such as the United States Association of Women Surgeons (AWS) and the Committee on Women’s Affairs (ACS), with the aim of promoting professional training and leadership [11].

#ILookLikeASurgeon emerged on social networks, as a hashtag designed to give visibility to women in surgery; becoming a campaign that seeks to join a community of surgeons to communicate and collaborate to deal with stereotypes in surgery that affect both men and women and that eventually affect all surgeons. The hashtag has drawn the attention of medical and surgical societies and organizations, universities and resident training programs, hospital systems, surgical associations such as the American College of Surgeons (ACS), the Royal College of Surgeons, and the world’s media [12]. After trying to build a surgical identity, there are topics to work on in terms of the trust gap, the threat of stereotype and sympathy in leadership roles.

Fig. 1. Female Feelings and emotions generated in this age of surgery.

Table 1

| Highlights of the female surgeon in surgery today. |
|---------------------------------------------------|
| • Surgery, like so many other professions, has long been associated with a male profile. |
| • There are gender biases and incompatibility with family life since it is a highly demanding and competitive specialty. |
| • Surgery involves a great challenge if the goal is to maintain a balance between career and family. |
| • Data from the Federal Network of Health Professionals mention that in Argentina there are approximately 8940 registered surgeons, of which 15.5% are women. |

“Making the invisible visible is only the first task that must be carried out by those who intend to build a society of free and equal men and women” [13].

3. Residence and resilience

The residency is an essential training instance to be a surgeon. Hence the imperative need to develop resilience. But what does resilience stand for? Psychology Today defines it as ‘… that ineffable quality that allows some people to be knocked down by life and come back stronger than ever; the capacity to recover quickly from difficulties, often equated with toughness’. It expresses a complex concept originally developed in the field of psychology, later adopted by sociology, also reaching political and educational sciences and it will inevitably gain attention in medical education soon [14].

In 2020, we got involved in an unexpected global event that despite the unpredictability of this context of disease as a pandemic, at a health, economic and social level, the world had to take a big step, so technology became the protagonist. So far in June 2021, more than 175 million confirmed cases of COVID-19 have been reported to the WHO, including nearly 4 million deaths worldwide. Argentina is in the second wave and is considered the second country in Latin America with the highest number of COVID-19 cases [15].

Mitigation measures have negatively affected all activities, including essential ones. Education was also disproportionately affected, as the gathering of the youngest members of the community in closed spaces can contribute significantly to the spread of the virus. Thus, more than 900 million students of all levels of education have been affected. However, those who are in a residency program have responsibilities, mainly in providing services and supporting their health system, especially in times of crisis. This led to the closure of academic institutions around the world, the reassignment of academic apprentices to clinical roles, and the cessation of compulsory education and training [16]. This health crisis, considered as an unprecedented situation, leads us to raise doubts, controversies, and dilemmas in health care in general, and especially in surgery, understanding that residents are probably more vulnerable than all professionals [17], Table 2.

Table 2

| Highlights of residence and resilience. |
|---------------------------------------|
| • Resilience can be considered as a type of emotional armor, a shield that defends people from excessive and negative feelings. |
| • For surgical residents, their training and education process is a concern. Thus, telemedicine minimizes this educational gap. |
| • Telemedicine refers to various modalities of remote care, including phone calls, image reviews, and real-time videconference visits. |
| • The COVID-19 pandemic has reinforced this digital alternative in order to achieve efficiency and benefit for surgical education. |
multimedia allowed clinical departments to implement lectures and teaching sessions for students or to update residents. To overcome the lack of practical experience of the trainee doctor, the access to video libraries was given by videoconferences with patients, as in the case of “Imperial College London”, this encouraged doctors to teach online from the hospital [19]. As regards surgery, “video libraries” are particularly beneficial, and group visualization has been proposed as a more interactive and motivating exercise, and additional expert comment can add educational value. Regarding social networks, Twitter, became a very accessible and used network for the vast majority of students, “tweetorials” (clinical tutorials in a series of tweets that provide links to educational material) which allowed residents interact with world leaders in their areas of interest. “Telemedicine” has become a great instrument for monitoring pathologies in risk patients, in compliance with the mandatory quarantine regime [16]. Thus, there are multiple instruments that are available to staff, under this global event, with advances and methodologies that are here to stay. We can mention that leaders in their areas of interest.

Ethical approval

Not required.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

Ethical approval not required.

Declaration of competing interest

The authors declare that they have no conflict of interest.

Acknowledgements

We would like to thank the Cordoba Surgery Association for providing space and support in scientific activity for the residents of Cordoba General Surgery, its president, Valenzuela Carlos, and other members, Lerdia Fabián and Signorini Franco.

References

[1] A. Cochran, W.B. Elder, M. Crandall, K. Brasel, T. Hauschild, L. Neumayer, Barriers to advancement in academic surgery: views of senior residents and early career faculty, Am. J. Surg. 206 (2013) 661–666, https://doi.org/10.1016/j.amjsurg.2013.07.003.

[2] D.K.P. Ceppa, S.C. Dolejs, N. Boden, S. Phelan, K.J. Yost, M. Edwards, et al., Gender bias and its negative impact on cardiothoracic surgery, Ann. Thorac. Surg. 109 (2020) 14–17, https://doi.org/10.1016/j.jatuhcrc.2019.06.085.

[3] María del Binda, Silveira Carmen, Romina y Kramer, Cristian Cecilia Grieron, la primera médica Argentina, Revista Argentina de Radiología 74 (2010) 361–365. Available on: https://www.redalyc.org/articulo.oa?id=38252849605.

[4] K.W. Sexton, K.M. Hocking, E. Wise, M.J. Ongood, J. Cheung-Flynn, P. Komalavilas, et al., Women in academic surgery: the pipeline is busted, J. Surg. Educ. 69 (2012) 84–90, https://doi.org/10.1016/j.jsurg.2011.07.006.

[5] R.M. Palacios Huatuco, J.E. Llano, L.B. Moreno, M.S. Ponce Beti, Analysis of the impact of the pandemic on surgical residency programs during the first wave in Argentina: a cross-sectional study, Ann Med Surg 62 (2021) 455–459, https://doi.org/10.1016/j.amsu.2021.01.065.

[6] L.G. Elmore, D.B. Jeffe, L. Jin, M.M. Awdal, L.R. Turnbull, National survey of burnout among US general surgery residents, J. Am. Coll. Surg. 223 (2016) 440–451, https://doi.org/10.1016/j.jamcollsurg.2016.05.014.

[7] G. Martinez, K. Daniels, A. Chandra, Fertility of men and women aged 15-44 years in the United States: National survey of family growth, 2006-2010, Natl Health Stat Report 12 (2012) 1–28.

[8] H.L. Yeo, J.S. Abelson, M.M. Symer, J. Mao, F. Michelassi, R. Bell, et al., Association of time to attrition in surgical residency with individual resident and programmatic factors, JAMA Surg 153 (2018) 511–517, https://doi.org/10.1001/jamasurg.2017.6202.

[9] N.K. Zern, S. Shallhub, D.E. Wood, K.E. Calhoun, Association of sex with perceived career barriers among surgeons, JAMA Surg 154 (2019) 1155–1158, https://doi.org/10.1001/jamasurg.2019.2648.

[10] E. Gifford, J. Galante, A.H. Kaji, V. Nguyen, M.T. Nelson, R.A. Sidwell, et al., Factors associated with general surgery residents’ desire to leave residency programs: a multi-institutional study, JAMA Surg 149 (2014) 946–953, https://doi.org/10.1001/jamasurg.2014.935.

[11] A.R. Wilcox, S.W. Trooboff, C.S. Lai, P.L. Turner, S.L. Wong, Trends in gender representation at the American College of Surgeons clinical congress and the academic surgical congress: a mixed picture of progress, J. Am. Coll. Surg. 229 (2019) 397–403, https://doi.org/10.1016/j.amjsurg.2019.06.002.

[12] K.A. Hughes, #ILookLikeASurgeon goes viral: how it happened, Bull. Am. Coll. Surg. 100 (2015) 10–16.

[13] P.A. Collado, Visibilidad e invisibilidad: Acerca del trabajo y las mujeres, Rev. Catalyisis 12 (2009) 178–187, https://doi.org/10.1590/s1414-49820090000200007.

[14] R.M. Epstein, M.S. Kramer, Physician resilience: what it means, why it matters, and how to promote it, Acad. Med. 88 (2013) 301–303, https://doi.org/10.1097/ACM.0b013e318280cff0.

[15] WHO, Coronavirus (COVID-19) dashboard | WHO coronavirus (COVID-19) dashboard with vaccination data, n.d, https://covid19.who.int/, 2021. accessed June 20.

[16] A. Mian, S. Khan, Medical education during pandemics: a UK perspective, BMC Med. 18 (2020) 100, https://doi.org/10.1186/s12916-020-01577-y.

[17] A.K. Kapila, M. Schemm, Y. Farid, S. Ortiz, M. Hamdi, The impact of coronavirus disease 2019 on plastic surgery training: the resident perspective, Plast Reconstr Surg - Glob Open 8 (2020), e3054, https://doi.org/10.1097/GOX.0000000000002854.

[18] A. Cook, J.P. Salle, J. Reid, K.F. Chow, J. Kuan, H. Razvi, et al., Prospective evaluation of remote, interactive videoconferencing to enhance urology resident education: the genitourinary teleteaching initiative, J. Urol. 174 (2005) 1958–1960, https://doi.org/10.1016/j.juro.2004.12.079.

[19] K.M. Augustad, R.O. Lindstrom, Overcoming distance: video-conferencing as a clinical and educational tool among surgeons, World J. Surg. 33 (2009) 1356–1365, https://doi.org/10.1007/s00268-009-0306-0.

[20] C.A. Liebert, L. Mazier, S. Berezikoy Merrell, D.T. Lin, J.N. Lau, Student perceptions of a simulation-based flipped classroom for the surgery clerkship: a mixed methods study, Surgery 160 (2016) 591–598, https://doi.org/10.1016/j.amjsurg.2016.03.034.