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#### **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 <sup>a</sup>, Rafael Pereyra Ferrero <sup>b</sup>, Gonzalo M. Bono <sup>c</sup>, Lucas Panichelli <sup>b</sup>, Julian E. Liaño <sup>d</sup>, René M. Palacios Huatuco <sup>d,\*</sup>

- <sup>a</sup> Department of General Surgery, Hospital Militar Regional Córdoba, Av. Cruz Roja Argentina 1174, Córdoba Capital, Argentina
- b Department of General Surgery, Hospital Privado Universitario de Córdoba, Av. Naciones Unidas 346, Córdoba Capital, Argentina
- c Department of General Surgery, Instituto Médico Río Cuarto, Hipólito Yrigoyen 1020, Río Cuarto, Córdoba, Argentina
- d Department of General Surgery, Clínica Universitaria Reina Fabiola, Universidad Católica de Córdoba, Oncativo 1248, Córdoba Capital, Argentina

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#### ABSTRACT

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 Cordoba, which was the first general surgery congress held in Argentina during 2021; The Association of Residents and Concurrent Surgery of Cordoba 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 Cordoba was held. In this event with a hybrid format, the Association of Residents and Concurrent Surgery of Cordoba, 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 tolerant 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 was about 30 years old, when she, dressed as a man, learned the art of surgery from a Madrid surgeon.

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

<sup>\*</sup> Corresponding author. Universidad Católica de Córdoba, Oncativo 1248, Córdoba, X5004FHP, Argentina. E-mail address: manuelpalacioshuatuco@gmail.com (R.M. Palacios Huatuco).

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.

Healthcare in times of COVID-19 is showing that the doctor-patient relationship can definitely be opened up to digital channels, but this opening is only the most visible manifestation of a deeper digital movement that affects all medicine and healthcare. Thus, how is it related to the training context of residents? The objective would be to minimize the educational gap with the implementation of these new technologies (Teleconferences and webinars) [18]. Applications such as Google Hangouts, Skype, Zoom, GoToMeeting or other virtual meeting

## **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 videoconference 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 the impact on the training of residents with surgical programs remains unknown and it is estimated that it will have long-term effects, both positive and negative [20]. Therefore, it is important to value a more innovative approach in the training of our professionals through virtual tools and simulation. Currently, simulation is considered one of the most important teaching methodologies in the training of the surgeon, since it allows the training of the different skills that make up the spectrum of professional competence and complement it with the field of research and academic productivity [5].

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