

Journal Pre-proof

The gender gap matters

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PII: S2210-8440(21)00028-9

DOI: <https://doi.org/10.1016/j.tacc.2021.02.005>

Reference: TACC 1087

To appear in: *Trends in Anaesthesia and Critical Care*



Please cite this article as: Berger-Estilita J, The gender gap matters, *Trends in Anaesthesia and Critical Care*, <https://doi.org/10.1016/j.tacc.2021.02.005>.

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Editorial to Trends in Anaesthesia and Critical Care

Title: The gender gap matters

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Main Text:

We have been trained since medical school to look at the human body as the average 70 Kg-male. It has always been assumed that there was nothing fundamentally different between male and female bodies, other than size and reproductive function. That couldn't be further from the truth and as we open our anatomy and physiology books in 2021, they are still covered with examples that contemplate the male-unless-otherwise-specified default, with female bodies and their function frequently appearing as a subchapter of human medicine, as a variation of standard humanity.

The gender data gap that we consistently find in medical textbooks accompanies all health care professionals throughout their entire professional, clinical, and research careers. Except for Gynecology and Obstetrics, where there is really no way around the topic, the knowledge in health of half of the world's population has been adapted to the male standard.

Contrary to what we assumed for centuries – even millennia – sex differences can be substantial but the inclusion of gender-specific information in textbooks is dependent on the availability of sex-specific data, and this evidence is lacking. It is a never-ending vicious circle that we should be able to stop.

In this issue of *Trends in Anaesthesia and Critical Care*, Brenna's paper addresses this issue, particularly focusing on the gender differences in the pharmacology of anesthetic drugs.¹ It may come as a surprise to the reader that women experience more drug reactions, have a quicker recovery from anesthesia or need significantly less muscle relaxants than men. Unfortunately, these are only a few results of data that has been consistently sex-disaggregated. As Brenna mentions, the failure to include women in clinical trials and to perform sex-stratified analyses is a historical problem that needs to be specifically overcome in the design phase of any study.

The hallmark of unawareness of the female body is the Thalidomide example. In 1960, physicians started prescribing thalidomide to pregnant women with morning sickness. The drug was considered safe because research behind it was compelled to state that "at high doses, it was safe enough not to kill a rat"². But while it was safe for rats, it was certainly unsafe for fetuses, leading to over 10,000 births with children facing thalidomide-related disabilities. In the aftermath of the scandal, the Food and Drug Administration (FDA) issued guidelines excluding pregnant women from drug trials. To this day, because of the routine exclusion of pregnant women from such trials, we lack solid data on many medical

treatments during pregnancy. Alongside their exclusion while pregnant, some researchers advocate against the inclusion of women in trials based on the fact that, while biological sex does matter, the lack of comparable data arising from the historical data gap makes including women a waste of resources.

As Brenna points out, this is also the case in Anaesthesia-related studies. Lack of patient recruitment with stratification by sex or (at least) subgroup analyses are, as the author puts it “a unique obstacle to representative anesthesia research”¹. This means that, while we want to generalize our findings to a certain population, we are skewing the data for men only and we are failing to accept that our findings may be systematically different in females. Needless to say, this has great implications to our daily practice.

In conclusion, medicine has long assumed that male bodies can represent humanity as a whole. Consequently, we are faced with a significant data gap in women, and this data gap needs to be closed. All in all, the lack of sex-disaggregated data affects our ability as anesthesiologists to administer safe anesthesia. Gender gap matters.

References

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