



Swiss TPH



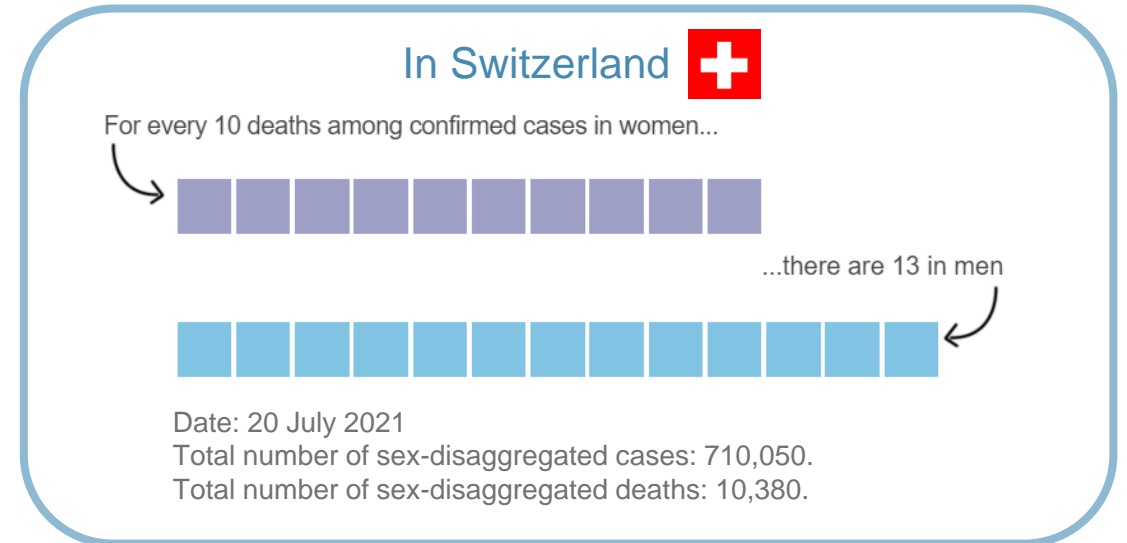
Gender and sex-differences in
COVID-19 incidence over time in
Switzerland

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The COVID-19 pandemic is gendered

- Sex and gender have proven to be key factors influencing COVID-19 fatality and incidence.
- Numerous studies have shown that **men are at higher risk of dying** from the disease.
- Despite this, recent evidence suggests that **infection rates are higher in women**, especially for those of working age (20-59 years), in European countries.
- Behind this are likely biological, as well as societal causes.



Study rationale: The pandemic and the policies to respond to it are deepening pre-existing inequalities, including gender inequality. Understanding how these policies can shape the incidence differently in men and women is essential to protect everyone from the pandemic effects.

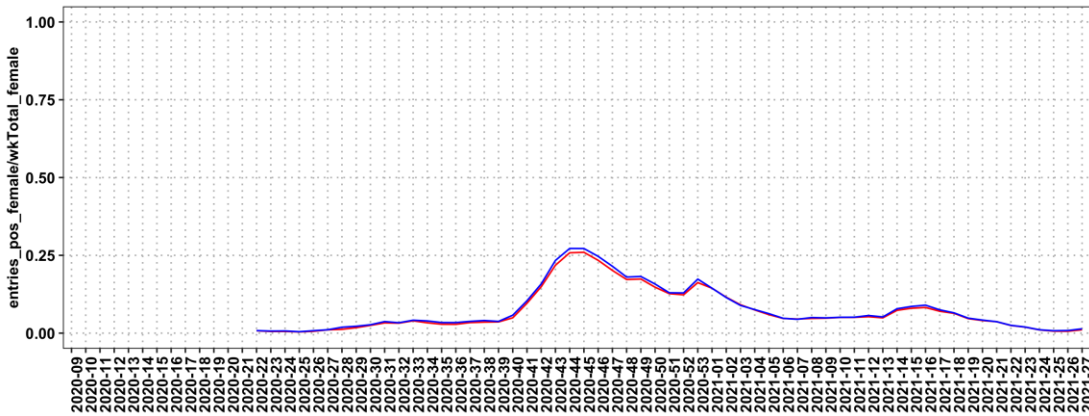
Study objective: Analyse the incidence of COVID-19 by sex over time in Switzerland and how COVID-19 policies shape this differently.

Methods

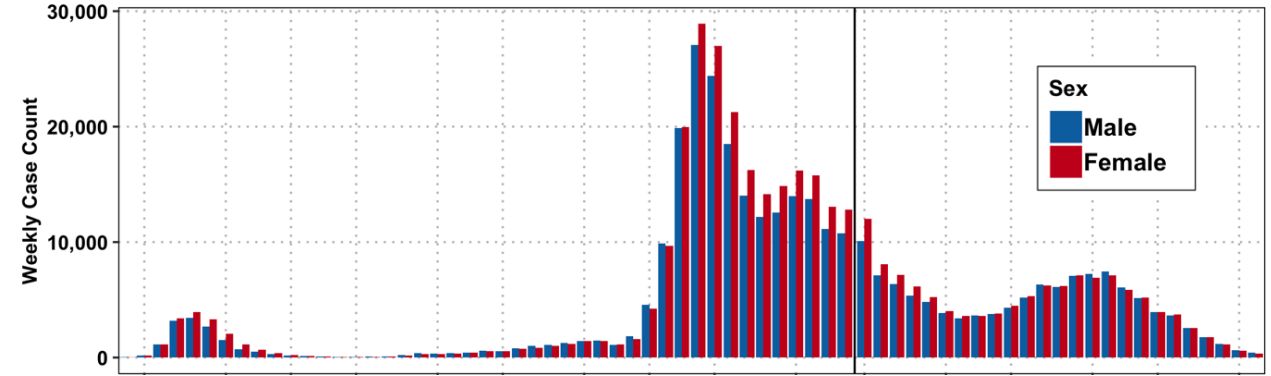
- To understand how COVID-19 incidence among men and women changed over time, we used case data stratified by sex and age to explore sex dynamics in incidence.
- Data was included since the beginning of the pandemic (February 2020, epidemiological week 9) until June 2021 (epidemiological week 26).
- We calculated the incidence rate ratio of women vs men, among working age (20-59) and retired (60+) individuals, for each week of the pandemic to estimate the changes in the disparity in incidence. We used an exact test assuming that incidence is Poisson-distributed to test for disparities.
- Excess cases per population are expressed in percentages beyond equal burden for convenience.
- Testing data was included and the positivity rate was calculated to account for different testing behavior.
- We used information on policy changes to complement and contextualize the case data.
- For a comparative analysis we selected two countries: Switzerland and Spain – only Switzerland is presented here.

Results from Switzerland

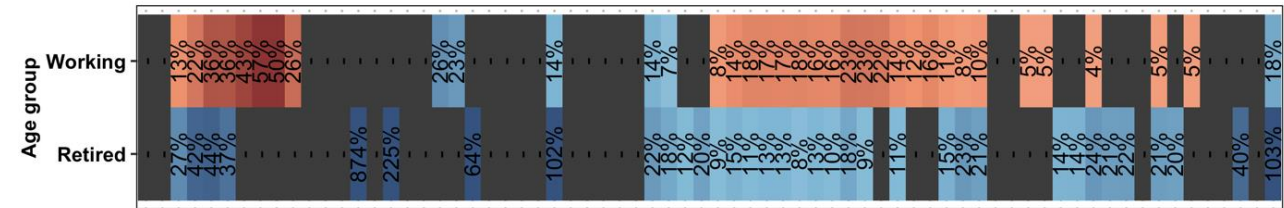
- During the both waves of COVID-19 (top, right), the **incidence was higher in women of working age (20-59)** compared to men of the same age group. The relationship is reversed among retired (60+) individuals (middle, right).
- A higher infection rate among women was higher during the first than second wave (middle, right), and is higher after cases peak (bottom, right).
- Even though women were tested more often than men, **the positivity rate was comparable (figure, below).**



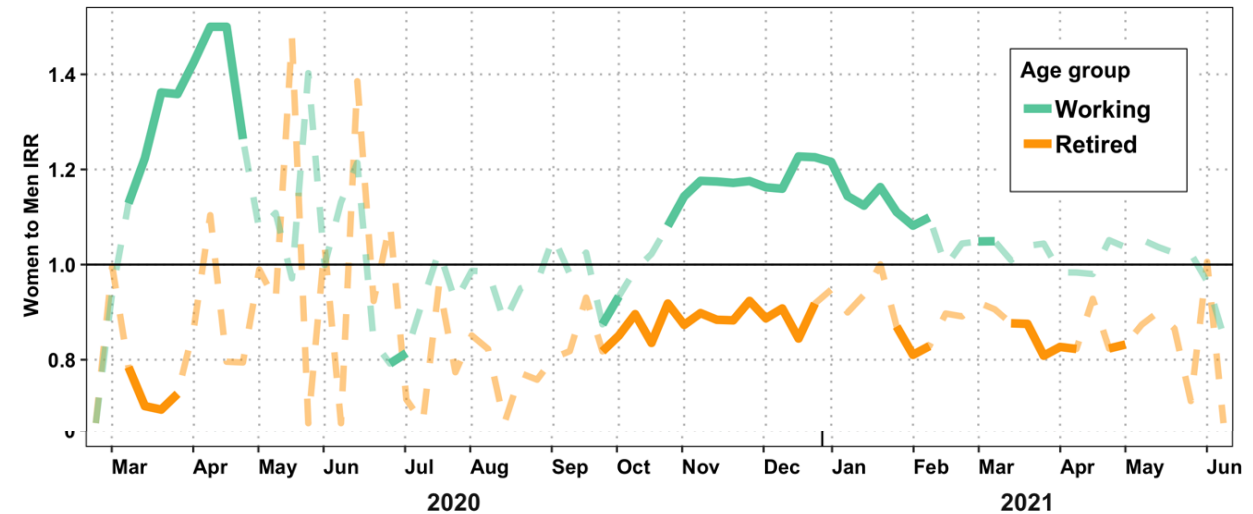
Case count by sex



Sex disparity by age-group (only significant differences shown)

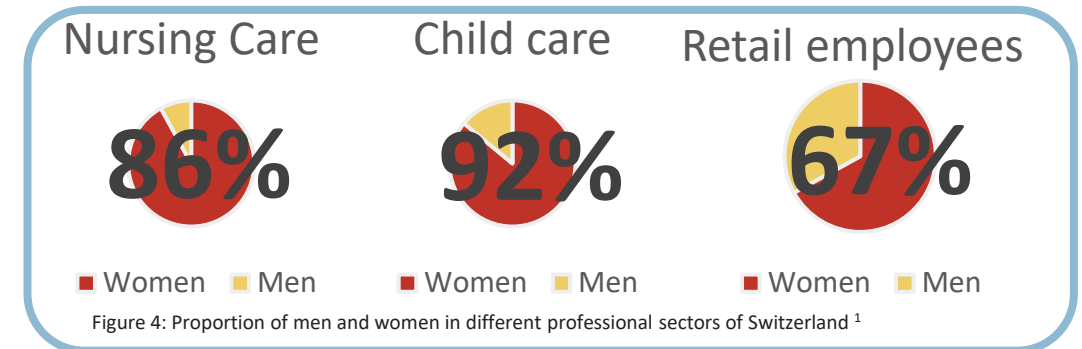


Women to men IRR by age group (non-significant differences in dashed lines)



Discussion

- The similar positivity rate between sexes suggests a true increase of the disease burden for women.
 - Reasons for gender disparity has been hypothesized to be rather societal than biological. This is supported by our finding that...
 - i. The disparity is present for the population in working age only, and that...
 - ii. the difference in containment measures between the first and second wave produced a different degree of disparity between the waves.
- These findings indicate a differential effect of COVID-19 public health policies on men and women.
- It has been hypothesized that women are more exposed to COVID-19, be it in the private or professional setting (Figure 4)
 - Women self-reported higher compliance with preventive interventions (namely social distancing and hygiene), suggesting that even though women aim to act responsibly, they are subject to circumstances where they cannot avoid infection.
 - Gender is one of the important social demographic factors that influence the effect of COVID-19 and its policies on the population. Other studies have shown that ethnicity or sociodemographic status also play an important role on the effectiveness of COVID-19 interventions.



Conclusion: This analysis highlights the importance of gender norms and sex differences on the evolution of the pandemic. Further studies will need to explore the differential effect of COVID-19 policies on the incidence across population groups.

¹ Corona-Krise: Eine feministische Analyse und ein feministischer Aufbruch. [Link](#)

² Piccoli et al. 2021

³ Makarova and Herzog 2015

Do you have questions, comments or feedback?

Contact us!

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