



EPIDEMIC | First Results

Covid-19 infection and socio-economic characteristics

This summary is part of the social epidemiology work package of the EPIDEMIC project. It describes the COVID-19 epidemic in France in socio-demographic and economic terms.

Background

The Severe Acute Respiratory Syndrome coronavirus (SARS-Cov-2), or Covid-19, was identified in early January 2020 as the cause of the epidemic affecting the city of Wuhan, rapidly spreading outside China and causing the deaths of several hundred thousand people worldwide.

Faced with this pandemic, many countries put various measures in place to limit the spread of the virus, including the introduction of total lockdown in France from 17 March to 11 May 2020.

France is characterised by the existence of social health inequalities. For example, a person living in a socially disadvantaged environment is more likely to suffer from illness or premature death than those who are advantaged. These inequalities are observed in many illnesses, both chronic and infectious. We expect to see social health inequalities for Covid-19, however, evidence is sparse due to a lack of data. To shed light on this issue we used data from the 'Baromètre Covid-19' national database, focussing on the data waves collected during the lockdown period.

Data sources used:

'Baromètre COVID 19' database, wave 1 to 4 (7th April – 5th May 2020)
<https://datacovid.org>

Sample of 20,001 volunteer's representative of the French mainland population from 18 years old and up, using the quota method

Hypotheses :

Social determinants of health are likely to influence the risk of infection, such as:

- **gender** : men and women will be affected differently by the virus, because social and professional roles place them at different risks.
- **occupation** : the virus affects socio-professional categories heterogeneously due to their differential exposure to the risk of infection.
- **housing** : housing characteristics will impact the risk of infection, particularly the number of people per room in the home, favouring the spread of the virus.

Descriptive results

Among the participants in this database, 55% are women and 45% are men [1].

Approximately a third of the participants are under 40 years old and 23% are 65 years or older.

Thirty-two percent of them live in an urban area with more than 100,000 inhabitants and 18% of the sample come from the Ile-de-France region.

With regard to their socio-economic characteristics, 11% have managerial status, 35% have mid-level professions or are employed, 9% are blue-collar workers, 3% are self-employed, 12% are inactive and 29% are retired [2].

In addition, 16% were required to continue working outside their homes during the lockdown period and 2% live in overcrowded housing.

In the four waves of data studied here, 8% of individuals believe they had contracted Covid-19, 4% reported having been diagnosed by a screening test or medical diagnosis and 88% believe they had not been infected [3].

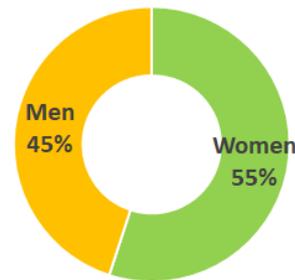
Analysed results



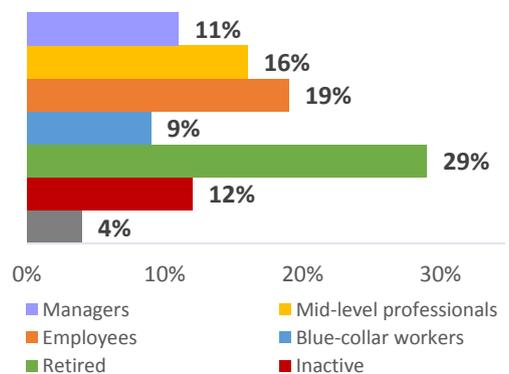
Covid-19 infection is gender related, especially with regard to occupation

- Women are over-represented among those diagnosed with Covid-19 (60%) [4].
- Our adjusted multivariable analysis results highlighted an interaction between gender and occupational social class. These initial results show that women who were unemployed, retired, in mid-level occupations in the “employee” category, are more likely than women managers to have been diagnosed with Covid-19, while the opposite trend is observed among men. Indeed, men in mid-level occupations, “employees”, blue-collar workers, unemployed and retired, are less at risk of being diagnosed with Covid-19 than male managerial professionals. This suggests that an effect related not to biological sex but to gender may be at play in the context of Covid-19.

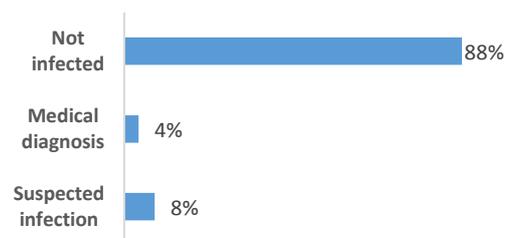
[1] Distribution of individuals by sex (n=19,835)



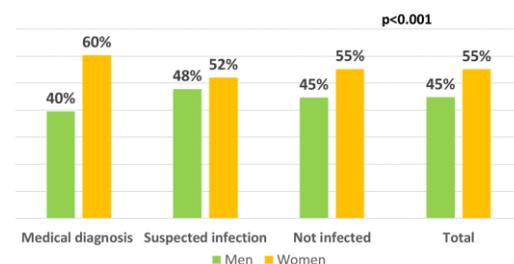
[2] Distribution of individuals by occupation (n=19,835)



[3] Distribution of individuals by Covid-19 infection status (n=19,835)



[4] Distribution of individuals' Covid-19 status according to sex (n=19,835)





Covid-19 infection is related to work outside the home during lockdown

- Participants who worked outside their home during lockdown were at greater risk of being diagnosed with Covid-19 or suspected of infection, compared to those who were working from home [5].
- Among the participants who were diagnosed, 29% of those who worked outside the home during lockdown are in mid-level occupations and 34% were in the “employee” category [6].



Covid-19 infection is linked to overcrowding in the home

- The increase in the number of people per room living in the dwelling increases the risk of suspected infection.

Conclusion

Reporting a positive Covid-19 infection is socially distributed according to age and gender. These demographic characteristics of the epidemic are therefore partly a reflection of social stratification.

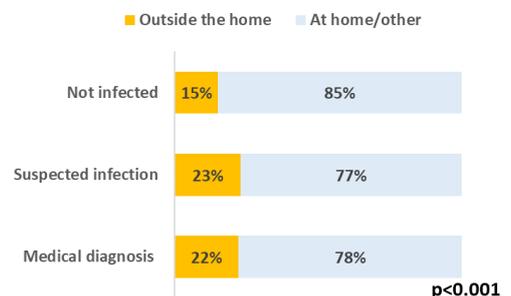
Because of these distinctions, social and professional roles do not subject men and women managers with large professional networks and mid-level employed professions, whose work requires activity outside the home during lockdown, to the same risks.

We suggest that women, who are more represented in para-medical and service professions, have been exposed to the virus more frequently or have had more access to testing. This hypothesis needs further exploration.

Infectious risks are also different depending on peoples' living conditions in the home, particularly for those living in more overcrowded conditions where contact with the infection is harder to avoid.

These results call for a more detailed study of preventive action and risk reduction with regard to Covid-19, such as generalised lockdowns, the practicing of social distancing, and the wearing of masks - depending on demographic and socio-economic characteristics.

[5] Distribution of individuals' Covid-19 status according to profession during the lockdown period (n=19,835)



[6] Distribution of Covid-19 positively diagnosed individuals' professions (outside the home/at home) during the lockdown period and their usual employment contracts (n=737)



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