**Supplementary Figure 1. Flow chart, EpiCov survey May 2020**

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**Supplementary Table 1. Sociodemographic characteristics of individuals excluded from the analysis compared to included participants**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Excluded individuals****N=22,567** | **Included individuals****N=111,824** | *p* |
| **Sex** |  |  |  |
| Men | 48.4 | 47.9 | 0.27 |
| Woman  | 51.6 | 52.1 |  |
| **Age** |  |  |  |
| 15-19 | 8.4 | 6.9 | <0.001 |
| 20-29 | 24.0 | 11.4 |  |
| 30-49 | 32.7 | 30.4 |  |
| 50-64 | 18.0 | 25.1 |  |
| 65+ | 16.9 | 26.2 |  |
| **Level of income (deciles) \*** |  |  |  |
| Decile 1 (most disadvantaged) | 16.4 | 8.4 | <0.001 |
| Decile 2-3 | 23.2 | 18.5 |  |
| Decile 4-5 | 17.9 | 20.3 |  |
| Decile 6-7 | 16.4 | 21.3 |  |
| Decile 8-9 | 16.1 | 21.4 |  |
| Decile 10  | 10.0 | 10.1 |  |
| **Migratory status \*** |  |  |  |
| Majority population | 64.9 | 80.0 | <0.001 |
| Born in FOD | 17.1 | 0.7 |  |
| Parents born in FOD | 1.3 | 0.7 |  |
| Second generation EU | 3.5 | 5.3 |  |
| Second generation North Africa | 2.7 | 2.9 |  |
| Second generation sub-Saharan Africa | 1.0 | 0.8 |  |
| Second generation Asia | 0.5 | 0.5 |  |
| First generation EU | 2.8 | 3.5 |  |
| First generation North Africa | 3.1 | 3.3 |  |
| First generation sub-Saharan Africa | 2.4 | 1.5 |  |
| First-generation Asia | 0.8 | 0.9 |  |

*Weighted percentages*

*\*For the variables level of income and migratory status, we compared the distributions without taking into account the missing values so the distributions really reflect potential differences in the sociodemographic characteristics between excluded and included individuals.*

*p:p-value of chi-2 test comparing excluded with included individuals*

**Supplementary Table 2. Definition of prevention behaviour outcomes**

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcomes** | **Question** | **Alternatives** | **Construction of indicator** |
| **Not systematically wearing a face mask when outside in the most recent 7 days** | Among people who went out in the last 7 days:Did you wear a face mask when outside? | a. Yes, systematically each time I went outb. Certain times, but not alwaysc. Never, because you thought you did not need itd. Never, because you didn’t have one | Binary outcome:1 if answers b, c or d, 0 if answer a |
| **Not systematically washing hands after being outside in the most recent 7 days**  | Among people who went out in the last 7 days:Did you wash hands with soap or hydroalcoholic gel when you went back where you lived? | a. Yes, systematically after each exitb. Yes, almost after each exitc. Yes but after certain exits only4. Never | Binary outcome:1 if answers b, c or d0 if answer a |
| **Not being able to respect physical distancing when outside in the most recent 7 days** | Among people who went out in the last 7 days:Were you able to remain at more than 1 meter away from the persons you met outside? | a. You did not meet anybodyb. Yes, for all the persons metc. Yes, for almost all the persons you metd. No, you were not able to remain at 1 meter away | Binary outcome:1 if answer c or d0 if answer a or b |

**Supplementary Table 3. COVID-19 related exposure and prevention behaviours according to neighbourhood characteristics among EpiCov participants residing in the Greater Paris area (N=17,987)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | OvercrowdingN=17,987 | Working outside (among persons who worked in last 7 days)N=10,449 | Using public transportation (among persons who worked in last 7 days)N=10,449 | Not wearing mask systematically in last 7 days (among who went out)N=16,584 | Not washing hands systematically in last 7 days (among who went out)N=16,584 | Not being able to respect distance in last 7 days (among who went out)N=16,584 |
| **Neighbourhood deprivation (quintiles)** |
| Quintile 1  | 17.5 | 18.4 | 8.4 | 55.3 | 8.3 | 49.7 |
| Quintile 2 | 19.8 | 24.9 | 8.5 | 49.8 | 8.7 | 47.7 |
| Quintile 3 | 25.1 | 26.9 | 12.4 | 47.2 | 7.4 | 49.0 |
| Quintile 4 | 31.3 | 26.7 | 10.1 | 43.1 | 7.3 | 46.0 |
| Quintile 5 (most disadvantaged) | 38.2 | 30.6 | 12.1 | 36.6 | 5.8 | 44.5 |
| **Proportion of first-generation immigrants in the neighbourhood in Greater Paris area (quartiles)** |
| Q1 0-11% | 10.1 | 21.7 | 4.7 | 56.5 | 10.8 | 46.3 |
| Q2 12-16% | 17.7 | 19.4 | 8.2 | 54.5 | 8.5 | 50.6 |
| Q3 17-23% | 24.1 | 23.1 | 10.9 | 51.3 | 6.9 | 49.7 |
| Q4>23% | 34.3 | 25.2 | 12.6 | 40.6 | 6.1 | 46.8 |

*Weighted percentages*

**Supplementary Table 4. Individual and neighbourhood determinants of COVID-19 related exposure and prevention behaviours during the French first Covid-19 wave (April/June 2020) among EpiCov participants in Greater Paris area - adjusted odds ratios**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Overcrowding | Using public transportation to go to work (among employed) | Not wearing mask systematically outside in last 7 days (among those who went out) | Not being able to respect distance in last 7 days (among those who went out) |
|  | N=17,987 | N=10,449 | N=16,584 | N16,584 |
|  | % | aOR [CI95%] | *p* | % | aOR [CI95%] | *p* | % | aOR [CI95%] | *p* | % | aOR [CI95%] | p |
| **Migratory status** |  |  |  |  |  |  |  |  |  |  |  |  |
| Majority population | 13.5 | ref | <0.001 | 7.6 | ref | <0.001 | 57.2 | ref | <0.001 | 49.8 | ref | <0.001 |
| Born in FOD | 25.3 | 1.61 [1.15; 2.27] |  | 12.8 | 1.26 [0.71; 2.23] |  | 34.1 | 0.44 [0.33; 0.59] |  | 48.5 | 0.96 [0.70; 1.30] |  |
| Parents born in FOD | 29.2 | 1.24 [0.90; 1.71] |  | 15.1 | 1.70 [1.10; 2.64] |  | 52.9 | 0.74 [0.56; 0.98] |  | 59.2 | 1.13 [0.86; 1.49] |  |
| Second generation EU | 19.4 | 1.28 [1.03; 1.60] |  | 6.0 | 0.75 [0.51; 1.10] |  | 51.0 | 0.79 [0.68; 0.93] |  | 47.3 | 0.90 [0.77; 1.05]  |  |
| Second generation North Africa | 39.3 | 1.69 [1.41; 2.02] |  | 7.5 | 0.80 [0.53; 1.20] |  | 49.1 | 0.71 [0.60; 0.84] |  | 53.0 | 0.96 [0.81; 1.13] |  |
| Second generation sub-Saharan Africa | 49.5 | 1.94 [1.50; 2.51] |  | 14.6 | 1.39 [0.80; 2.42] |  | 46.3 | 0.63 [0.48; 0.82] |  | 58.5 | 1.09 [0.82; 1.43] |  |
| Second generation Asia | 43.0 | 1.90 [1.38; 2.60] |  | 7.3 | 0.80 [0.39; 1.65] |  | 36.8 | 0.37 [0.27; 0.51] |  | 52.2 | 0.84 [0.62; 1.15] |  |
| First generation EU | 22.6 | 1.75 [1.38; 2.21] |  | 11.0 | 1.32 [0.94; 1.86] |  | 42.8 | 0.72 [0.60; 0.87] |  | 44.5 | 0.97 [0.80; 1.16] |  |
| First generation North Africa | 46.1 | 2.94 [2.45; 3.53] |  | 9.8 | 1.05 [0.73; 1.51] |  | 30.6 | 0.40 [0.33; 0.48] |  | 37.5 | 0.64 [0.53; 0.77] |  |
| First generation sub-Saharan Africa | 47.2 | 2.14 [1.69; 2.70] |  | 26.0 | 2.46 [1.99; 3.83] |  | 27.0 | 0.32 [0.25; 0.40] |  | 41.5 | 0.68 [0.55; 0.84] |  |
| First generation Asia | 44.4 | 2.64 [2.04; 3.42] |  | 12.9 | 1.44 [0.86; 2.42] |  | 19.5 | 0.22 [0.17; 0.29] |  | 39.2 | 0.69 [0.53; 0.91] |  |
| **Sex** |  |  |  |  |  |  |  |  |  |  |  |  |
| Men | 22.8 | ref | 0.85 | 8.2 | ref | <0.05 | 54.5 | ref | <0.001 | 47.6 | ref | 0.09 |
| Women | 22.3 | 1.01 [0.91; 1.12] |  | 10.6 | 1.23 [1.03; 1.48] |  | 46.2 | 0.70 [0.65; 0.76] |  | 49.0 | 1.07 [0.99; 1.15] |  |
| **Age** |  |  |  |  |  |  |  |  |  |  |  |  |
| 15-19 | 38.6 | 1.04 [0.86; 1.27]  | <0.001 | 11.9 | 1.26 [0.36; 4.35] | 0.58 | 54.2 | 1.21 [0.99; 1.47] | <0.001 | 51.7 | 1.03 [0.86; 1.24] | <0.001 |
| 20-29 | 26.5 | 0.64 [0.57; 0.74] |  | 10.0 | 1.10 [0.85; 1.42] |  | 59.3 | 1.24 [1.09; 1.41] |  | 63.2 | 1.44 [1.27; 1.63] |  |
| 30-49 | 34.2 | ref |  | 9.1 | ref |  | 53.6 | ref |  | 52.4 | ref |  |
| 50-64 | 14.3 | 0.32 [0.28; 0.36] |  | 9.7 | 1.08 [0.89; 1.31]  |  | 48.4 | 0.71 [0.64; 0.78] |  | 43.2 | 0.63 [0.57; 0.69] |  |
| > 64 | 4.1 | 0.09 [0.07; 0.12] |  | 6.1 | 0.65 [0.33; 1.31] |  | 38.5 | 0.39 [0.34; 0.44] |  | 34.2 | 0.38 [0.34; 0.44] |  |
| **Level of income (deciles)** |
| Decile 1 (most disadvantaged) | 46.7 | 4.94 [4.07; 5.99] | <0.001 | 14.4 | 1.37 [0.94; 1.99] | 0.42 | 38.4 | 0.68 [0.57; 0.81] | <0.001 | 45.0 | 0.83 [0.70; 0.98] | 0.09 |
| Decile 2-3 | 42.0 | 4.90 [4.10; 5.86] |  | 13.4 | 1.31 [0.95; 1.80] |  | 40.5 | 0.67 [0.58; 0.78] |  | 47.3 | 0.91 [0.78; 1.06] |  |
| Decile 4-5 | 27.8 | 3.21 [2.68; 3.85] |  | 10.3 | 1.05 [0.77; 1.43] |  | 47.8 | 0.78 [0.68; 0.90] |  | 46.8 | 0.86 [0.75; 0.99] |  |
| Decile 6-7 | 18.7 | 2.34 [1.98; 2.77] |  | 9.6 | 1.10 [0.84; 1.44]  |  | 50.0 | 0.77 [0.69; 0.87] |  | 48.2 | 0.91 [0.81; 1.02] |  |
| Decile 8-9 | 12.3 | 1.59 [1.36; 1.85] |  | 7.6 | 1.01 [0.81; 1.26] |  | 54.5 | 0.84 [0.76; 0.93] |  | 50.2 | 0.99 [0.90; 1.09] |  |
| Decile 10  | 7.3 | ref |  | 6.4 | ref |  | 59.6 | ref |  | 49.5 | ref |  |
| **Occupation** |  |  |  |  |  |  |
| Farmers, self-employed and entrepreneurs | 16.3 | 0.72 [0.55; 0.93] | <0.001 | 3.2 | 0.43 [0.24; 0.79] | <0.001 | 43.8 | 0.65 [0.54; 0.78] | <0.001 | 40.5 | 0.77 [0.65; 0.93] | <0.001 |
| High level prof. | 14.9 | Ref |  | 6.7 | Ref |  | 59.8 | Ref |  | 51.1 | Ref  |  |
| Lower level prof. | 16.7 | 0.83 [0.71; 0.98] |  | 8.8 | 1.20 [0.93; 1.55] |  | 51.5 | 0.87 [0.77; 0.98] |  | 50.7 | 1.07 [0.95; 1.19] |  |
| Skilled clerical, sales and services | 24.8 | 0.87 [0.72; 1.05] |  | 12.2 | 1.58 [1.19; 2.08] |  | 55.3 | 0.97 [0.83; 1.12] |  | 56.9 | 1.10 [0.95; 1.27] |  |
| Unskilled clerical, sales and services | 23.7 | 1.10 [0.93; 1.30] |  | 10.5 | 1.24 [0.94; 1.64] |  | 43.4 | 0.76 [0.67; 0.86] |  | 43.5 | 0.84 [0.74; 0.95] |  |
| Skilled labourers and factory workers | 29.9 | 1.15 [0.91; 1.45] |  | 11.2 | 1.28 [0.88; 1.84] |  | 38.3 | 0.63 [0.52; 0.77] |  | 39.7 | 0.78 [0.65; 0.95] |  |
| Unskilled labourers and factory workers | 36.3 | 1.39 [1.01; 1.92] |  | 19.8 | 2.23 [1.41; 3.51] |  | 38.2 | 0.69 [0.51; 0.93] |  | 38.5 | 0.71 [0.52; 0.95] |  |
| Never worked and others | 33.4 | 1.13 [0.96; 1.34] |  |  |  |  | 48.1 | 0.67 [0.58; 0.77] |  | 49.9 | 0.84 [0.73; 0.97] |  |
| Health professionals | 22.7 | 0.97 [0.74; 1.27] |  | 17.5 | 2.34 [1.71; 3.21] |  | 41.3 | 0.51 [0.42; 0.62] |  | 53.2 | 0.96 [0.79; 1.16] |  |
| **Neighbourhood characteristics** |
| **Proportion of first-generation immigrants in the neighbourhood in Greater Paris area (quartiles)** |
| Q1 0-11% | 10.1 | ref | <0.001 | 4.7 | ref | <0.001 | 56.5 | ref | <0.001 | 46.3 | ref | <0.01 |
| Q2 12-16% | 17.7 | 1.88 [1.61; 2.20] |  | 8.2 | 1.71 [1.29; 2.26] |  | 54.5 | 0.96 [0.87; 1.07] |  | 50.6 | 1.21 [1.09; 1.35] |  |
| Q3 17-23% | 24.1 | 2.25 [1.93; 2.62] |  | 10.9 | 2.11 [1.60; 2.78] |  | 51.3 | 0.90 [0.81; 1.00] |  | 49.7 | 1.17 [1.05; 1.29] |  |
| Q4>23% | 34.3 | 2.33 [1.99; 2.72] |  | 12.6 | 2.12 [1.60; 2.81] |  | 40.6 | 0.74 [0.66; 0.83] |  | 46.8 | 1.13 [1.01; 1.26] |  |

*Multivariate logistic regressions further adjusted household type (except for overcrowding) ; analyses conducted on weighted data*

**Supplementary Table 5. Determinants of working outside only during the French first Covid-19 wave (April/June 2020) among EpiCov participants**

|  |  |
| --- | --- |
|  | **Working outside only (among persons who worked in last 7 days)****N=58,306** |
|  | **%** | **aOR [CI95%]** | ***p*** |
| **Migratory status** |  |  |  |
| Majority population | 32.6 | ref | <0.001 |
| Born in FOD | 35.1 | 1.01 [0.77; 1.32] |  |
| Parents born in FOD | 29.7 | 0.93 [0.72; 1.20] |  |
| Second generation EU | 30.5 | 0.91 [0.81; 1.01] |  |
| Second generation North Africa | 26.8 | 0.80 [0.69; 1.93] |  |
| Second generation sub-Saharan Africa | 26.6 | 0.81 [0.58;1.12] |  |
| Second generation Asia | 22.0 | 0.81 [0.55; 1.19] |  |
| First generation EU | 29.2 | 0.82 [0.70; 0.96] |  |
| First generation North Africa | 32.9 | 0.97 [0.83; 1.14] |  |
| First generation sub-Saharan Africa | 36.2 | 1.12 [0.92; 1.37] |  |
| First generation Asia | 21.4 | 0.55 [0.41; 0.75] |  |
| **Sex** |  |  |  |
| Men | 31.7 | ref | <0.001 |
| Women | 32.5 | 0.82 [0.78; 0.86] |  |
| **Age** |  |  |  |
| 15-19 | 34.8 | 0.90 [0.68; 1.20] | <0.001 |
| 20-29 | 29.8 | 0.89 [0.82; 0.96] |  |
| 30-49 | 30.1 | ref |  |
| 50-64 | 36.3 | 1.28 [1.21; 1.35] |  |
| > 64 | 35.7 | 1.05 [0.82; 1.37] |  |
| **Region of residence** |  |  |  |
| High intensity  | 25.9 | 0.77 [0.73; 0.82] | <0.001 |
| Moderate intensity  | 33.3 | 0.94 [0.89; 1.00] |  |
| Low intensity  | 35.3 | ref |  |
| **Level of income (deciles)** |  |  |  |
| Decile 1 (most disadvantaged) | 34.6 | 1.25 [1.11; 1.40] | <0.001 |
| Decile 2-3 | 37.5 | 1.46 [1.33. 1.61] |  |
| Decile 4-5 | 36.2 | 1.40 [1.28; 1.53] |  |
| Decile 6-7 | 32.9 | 1.28 [1.18; 1.39] |  |
| Decile 8-9 | 27.1 | 1.13 [1.04; 1.22] |  |
| Decile 10  | 23.4 | ref |  |
| **Occupation** |  |  |  |
| Farmers, self-employed, entrepreneurs | 50.2 | 5.61 [5.11; 6.15] | <0.001 |
| High level prof. | 13.5 | ref  |  |
| Lower level prof. | 24.1 | 1.86 [1.72; 2.01] |  |
| Skilled clerical, sales and services | 21.3 | 1.74 [1.59; 1.92] |  |
| Unskilled clerical, sales and services | 39.4 | 3.79 [3.50; 4.10] |  |
| Skilled labourers and factory workers | 33.1 | 2.61 [2.38; 2.87] |  |
| Unskilled labourers and factory workers | 38.9 | 3.49 [3.08; 3.94] |  |
| Health professionals | 72.3 | 17.28[15.7;19.0] |  |

*Multivariate logistic regression further adjusted on household type; \*\*\* <0,001; \*\*<0,01; \* <0,05; analyses conducted on weighted data*

**Supplementary Table 6. Proportion of persons not washing hands systematically after being outside according to migratory status and sex, N=103,350 The EpiCov Study, May 2020**

|  |  |  |
| --- | --- | --- |
|  |  | Non-systematically washing hands after being outside N=103,350 |
| Majority population | **Total** | **14.2** |
| Men | 18.7 |
| Women | 10.1 |
| *p* | *<0.001* |
| Persons born in FOD | **Total** | **6.6** |
| Men | 9.1 |
| Women | 3.7 |
| *p* | *<0.05* |
| FOD descendants | **Total** | **9.3** |
| Men | 11.8 |
| Women | 7.3 |
| *P* | *0.07* |
| Second-generation EU | **Total** | **10.7** |
| Men | 14.8 |
| Women | 6.7 |
| *p* | *<0.001* |
| Second-generation North Africa | **Total** | **8.5** |
| Men | 10.6 |
| Women | 6.7 |
| *p* | *<0.01* |
| Second-generation Sub-Saharan Africa | **Total** | **9.7** |
| Men | 13.2 |
| Women | 6.3 |
| *p* | *<0.05* |
| Second generation Asia | **Total** | **9.0** |
| Men | 14.1 |
| Women | 3.5 |
| *p* | *<0.001* |
| First-generation EU | **Total** | **9.1** |
| Men | 12.1 |
| Women | 6.7 |
| *p* | *<0.001* |
| First-generation North Africa | **Total** | **5.7** |
| Men | 6.5 |
| Women | 4.6 |
| *p* | *0.12* |
| First-generation sub-Saharan Africa | **Total** | **6.4** |
| Men | 7.9 |
| Women | 5.0 |
| *p* | *0.08* |
| First generation Asia | **Total** | **8.5** |
| Men | 11.7 |
| Women | 5.8 |
| *p* | *<0.05* |
|  | *p migratory status* | <0.001 |

*Weighted data*

**Supplementary Table 7. Determinants of not washing hands systematically during the French first Covid-19 wave (April/June 2020) among EpiCov participants**

|  |  |
| --- | --- |
|  | **Not washing hands systematically (among those who went out)****N=103,350** |
|  | **%** | **aOR [CI95%]** | ***p*** |
| **Migratory status** |  |  |  |
| Majority population | 14.2 | Ref | <0.001 |
| Born in FOD | 6.6 | 0.45 [0.31; 0.65] |  |
| Parents born in FOD | 9.3 | 0.68 [0.51; 0.91] |  |
| Second generation EU | 10.7 | 0.74 [0.66; 0.83] |  |
| Second generation North Africa | 8.5 | 0.58 [0.48; 0.69] |  |
| Second generation sub-Saharan Africa | 9.7 | 0.67 [0.49; 0.92] |  |
| Second generation Asia | 9.0 | 0.61 [0.41; 0.91] |  |
| First generation EU | 9.1 | 0.66 [0.56; 0.77] |  |
| First generation North Africa | 5.7 | 0.39 [0.31; 0.49] |  |
| First generation sub-Saharan Africa | 6.4 | 0.48 [0.37; 0.63] |  |
| First generation Asia | 8.5 | 0.75 [0.53; 1.04] |  |
| **Sex** |  |  |  |
| Men | 17.2 | ref | <0.001 |
| Women | 9.3 | 0.50 [0.48; 0.53] |  |
| **Age** |  |  |  |
| 15-19 | 19.9 | 1.87 [1.69; 2.07] | <0.001 |
| 20-29 | 15.8 | 1.45 [1.34; 1.56] |  |
| 30-49 | 11.0 | ref |  |
| 50-64 | 12.1 | 1.05 [0.99; 1.12] |  |
| > 64 | 14.2 | 1.23 [1.14; 1.33] |  |
| **Region of residence** |  |  |  |
| High intensity  | 9.3 | 0.65 [0.61; 0.69] | <0.001 |
| Moderate intensity  | 14.0 | 0.93 [0.89; 0.98] |  |
| Low intensity  | 14.7 | Ref |  |
| **Level of income (deciles)** |  |  |  |
| Decile 1 (most disadvantaged) | 13.1 | 0.98 [0.88; 1.09] | <0.001 |
| Decile 2-3 | 12.1 | 0.87 [0.79; 0.95] |  |
| Decile 4-5 | 13.8 | 0.98 [0.90; 1.06] |  |
| Decile 6-7 | 13.4 | 0.97 [0.90; 1.05] |  |
| Decile 8-9 | 13.4 | 1.01 [0.94; 1.09] |  |
| Decile 10  | 12.5 | ref |  |
| **Occupation** |  |  |  |
| Farmers, self-employed, entrepreneurs | 17.7 | 1.49 [1.36; 1.63] | <0.001 |
| High level prof. | 12.0 | ref |  |
| Lower level prof. | 13.8 | 1.18 [1.10; 1.27] |  |
| Skilled clerical, sales and services | 10.4 | 1.05 [0.95; 1.17] |  |
| Unskilled clerical, sales and services | 10.3 | 1.02 [0.94; 1.11] |  |
| Skilled labourers and factory workers | 15.3 | 1.23 [1.13; 1.35] |  |
| Unskilled labourers and factory workers | 15.8 | 1.42 [1.26; 1.61] |  |
| Health professionals | 7.9 | 0.82 [0.72; 0.94] |  |

*Multivariate logistic regression further adjusted on household type; \*\*\* <0,001; \*\*<0,01; \* <0,05; analyses conducted on weighted data*