

SUPPLEMENTARY MATERIALS

A geographical approach to the development of hypotheses relating to Covid-19 death rates

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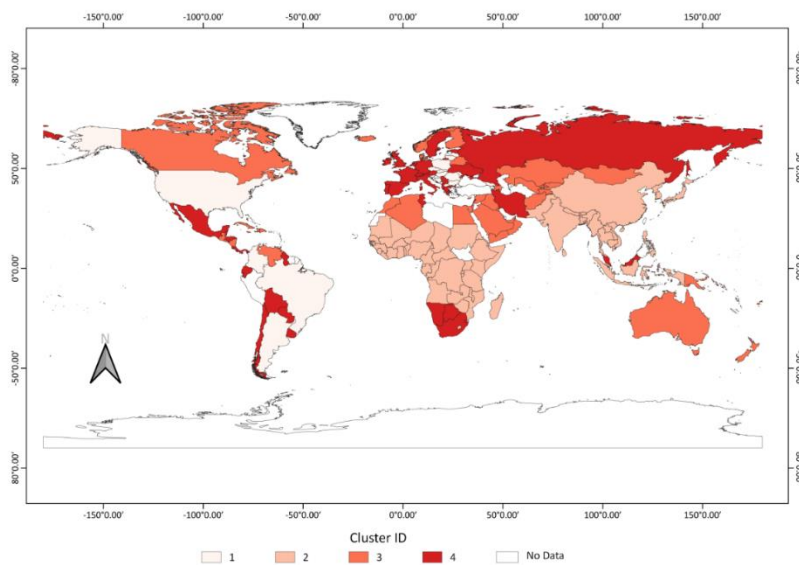


Fig. SM1: Map showing countries by cluster.

Table SM1: List of countries per cluster.

Cluster 1 High %BMI, high deaths (n=22)	Cluster 2 Low %BMI, low deaths (N=66)	Cluster 3 High %BMI , low deaths (n=50)	Cluster 4 High %BMI, medium deaths (n=46)
Argentina Armenia Belgium Bosnia and Herzegov. Brazil Bulgaria Colombia	Angola Bangladesh Benin Bhutan Brunei Burkina Faso Burundi Cambodia	Afghanistan Algeria Australia Azerbaijan Bahrain Barbados Belarus Canada	Albania Andorra Antigua and Barbuda Austria Bahamas Belize Bolivia

Croatia	Cameroon	Cuba	Botswana
Czechia	Cape Verde	Cyprus	Chile
Georgia	Central African Republic	Denmark	Costa Rica
Hungary	Chad	Dominica	Ecuador
Latvia	China	Dominican Republic	Estonia
Lithuania	Comoros	Egypt	France
Moldova	Congo	El Salvador	Germany
Montenegro	Cote d'Ivoire	Fiji	Greece
North Macedonia	DR Congo	Finland	Grenada
Poland	Djibouti	Guatemala	Guyana
Romania	Equatorial Guinea	Haiti	Honduras
Slovakia	Eritrea	Iceland	Iran
Slovenia	Eswatini	Iraq	Ireland
United States	Ethiopia	Israel	Italy
	Gabon	Jamaica	Jordan
	Gambia	Kazakhstan	Lebanon
	Ghana	Kuwait	Luxembourg
	Guinea	Kyrgyzstan	Malaysia
	Guinea-Bissau	Malta	Mexico
	India	Mongolia	Namibia
	Indonesia	Morocco	Netherlands
	Japan	New Zealand	Panama
	Kenya	Nicaragua	Paraguay
	Laos	Norway	Portugal
	Lesotho	Oman	Russia
	Liberia	Papua New Guinea	Saint Lucia
	Madagascar	Qatar	Serbia
	Malawi	Saint Kitts and Nevis	South Africa
	Maldives	S. Vincent/Grenadines	Spain
	Mali	Samoa	Suriname
	Mauritania	Saudi Arabia	Sweden
	Mauritius	Solomon Islands	Switzerland
	Mozambique	Syria	Trinidad and
	Myanmar	Tajikistan	Tobago
	Nepal	Tonga	Tunisia
	Niger	Turkey	Ukraine
	Nigeria	United Arab Emirates	United Kingdom
	Pakistan	Uzbekistan	Uruguay
	Philippines	Vanuatu	
	Rwanda	Venezuela	
	Sao Tome and Principe	Yemen	
	Senegal		
	Seychelles		

Sierra Leone		
Singapore		
Somalia		
South Korea		
Sri Lanka		
Sudan		
Tanzania		
Thailand		
Timor		
Togo		
Uganda		
Vietnam		
Zambia		
Zimbabwe		

Table SM2: Linear regression for countries with high percentage overweight.

```
> summary(lm(DEATHS~SWEETDRINKSLCAP+LATITUDE+VAC2_PER,data=grupo2))
Call:
lm(formula = DEATHS ~ SWEETDRINKSLCAP + LATITUDE + VAC2_PER,
    data = grupo2)

Residuals:
    Min       1Q   Median       3Q      Max
-1902.6  -732.8  -183.0   701.0  2532.1

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  700.260    278.132   2.518  0.01329 *
SWEETDRINKSLCAP  6.510     2.918   2.231  0.02775 *
LATITUDE     17.568     6.192   2.837  0.00545 **
VAC2_PER      -7.489     5.253  -1.426  0.15685
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1014 on 107 degrees of freedom
(3 observations deleted due to missingness)
Multiple R-squared:  0.1258,    Adjusted R-squared:  0.1013
F-statistic: 5.132 on 3 and 107 DF,  p-value: 0.002353
```

Table SM3. Linear regression model for countries in combined clusters 2 and 3.

```
> summary(lm(DEATHS~BMI25+LATITUDE+VAC2_PER,data=grupo2_3))
Call:
lm(formula = DEATHS ~ BMI25 + LATITUDE + VAC2_PER, data = grupo2_3)

Residuals:
    Min       1Q   Median       3Q      Max
-527.04 -136.86  -56.27  159.84  944.53

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -45.9176    70.1236  -0.655  0.51400
BMI25        4.7850     1.8218   2.627  0.00989 **
LATITUDE     0.9016     2.1131   0.427  0.67047
VAC2_PER      3.5120     1.0629   3.304  0.00130 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 272.9 on 107 degrees of freedom
(3 observations deleted due to missingness)
Multiple R-squared:  0.2583,    Adjusted R-squared:  0.2375
F-statistic: 12.42 on 3 and 107 DF,  p-value: 4.945e-07

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