



Trends and transitions in noncommunicable disease risk factors: data, analytics and implications. (Latin America)

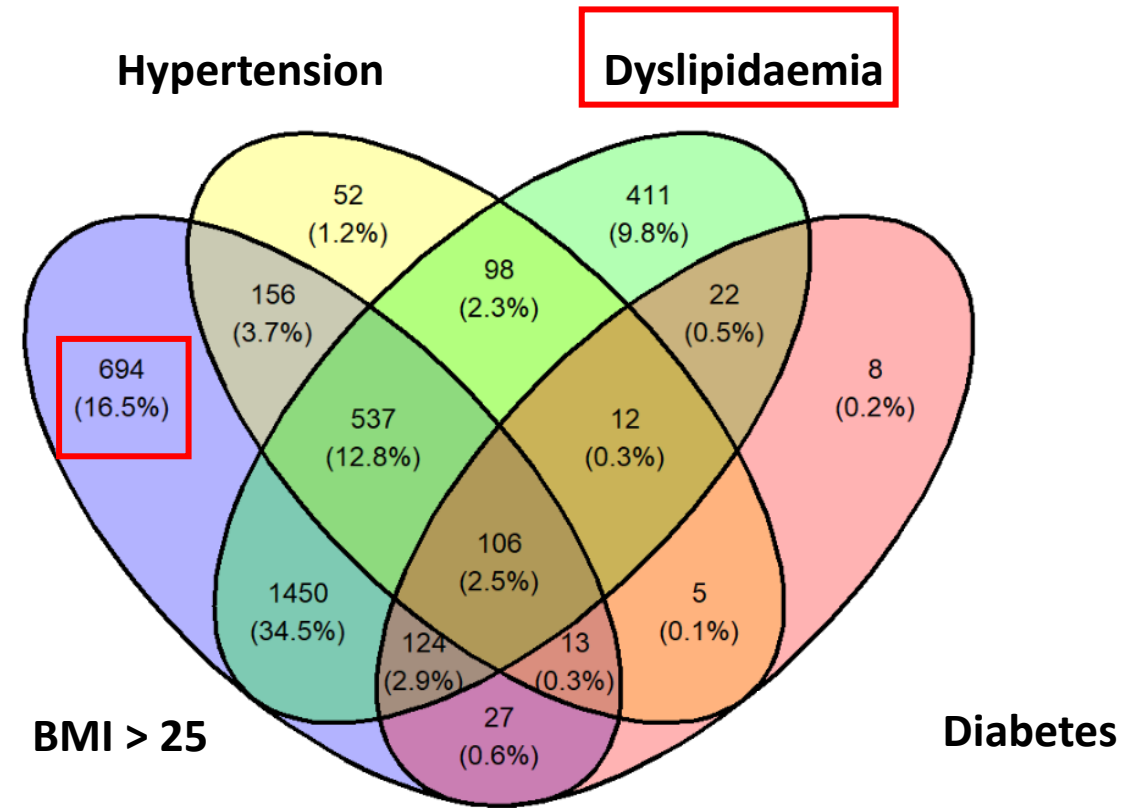
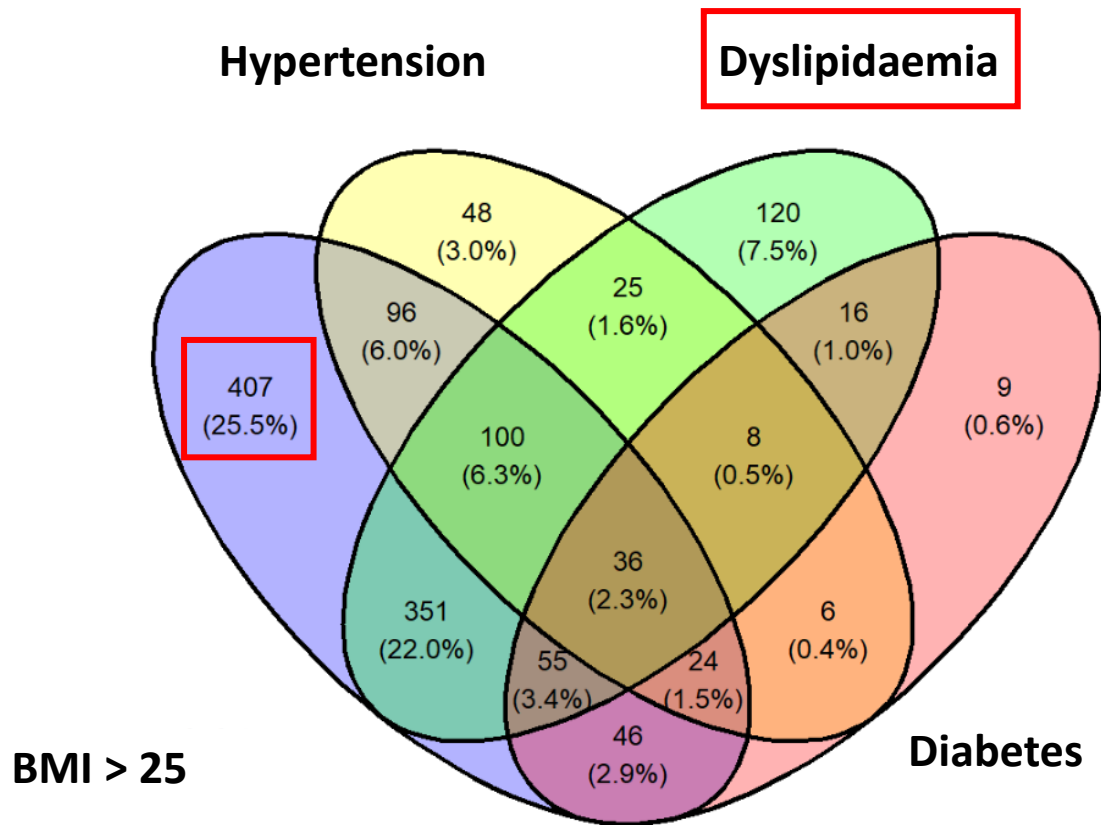
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Outline

- There is available data from national health surveys in 19 Latin American countries over the last two decades. However, there is only a handful of countries with more than one survey.
- There are 4 national-representative surveys from Mexico spanning over 18 years.
- We characterized obesity-phenotypes using the Edmonton Obesity Staging System which considers Medical, Mental, and Functional dimensions.

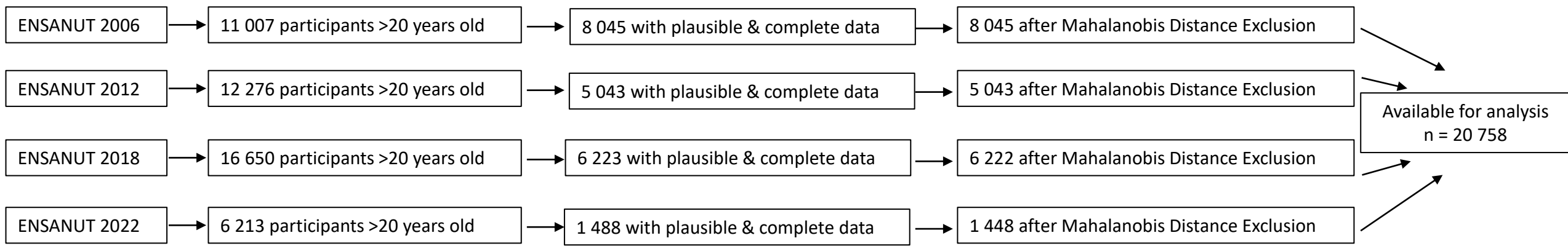
Belize 2006

Panama 2019

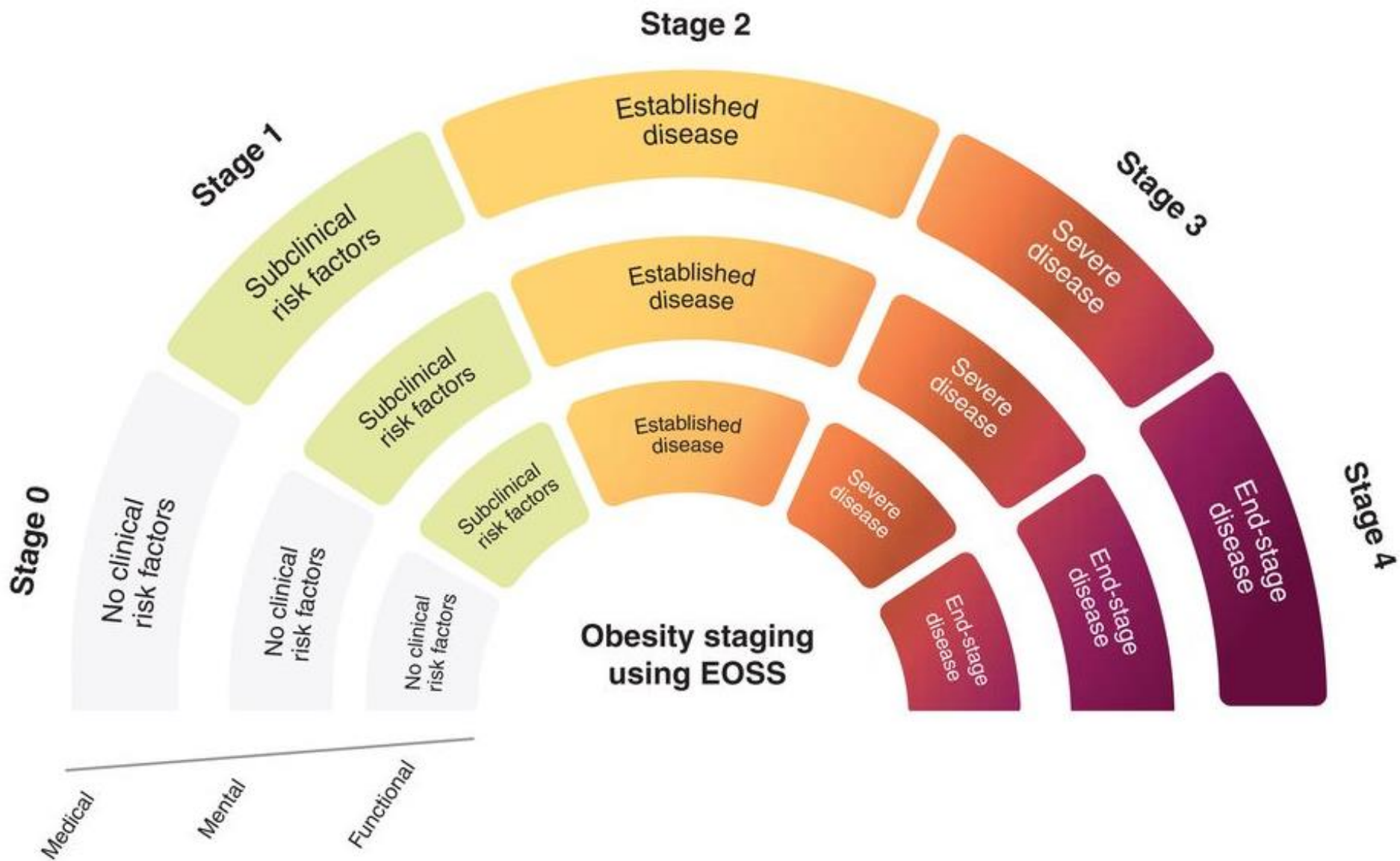


Additional insights from having multiple national-representative surveys





Participants with a BMI above 30 = 6 854 (33.0%)
Participants with a BMI between 25 and 29.9 = 7 990 (38.5%)
Participants with a normal BMI = 5 914 (28.4%)

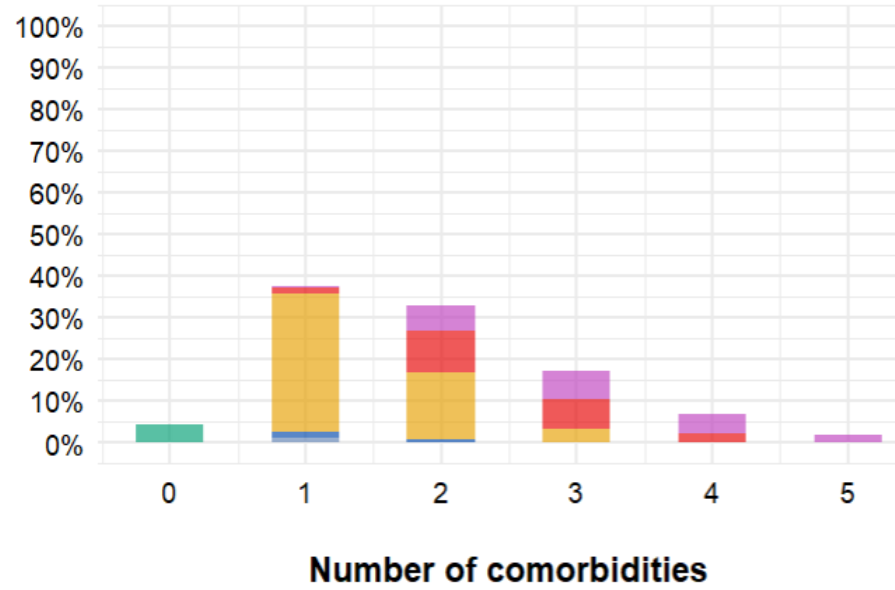


| | Stage 0 | Stage 1 | Stage 2 | Stage ≥ 3 |
|-------------------|---------|---------|---------|-----------|
| Medical | 4.7% | 4.5% | 90.1% | 32.7% |
| Mental | 27.6% | 62.9% | 25.1% | NA |
| Functional | 38.3% | 75.1% | 17.5% | NA |

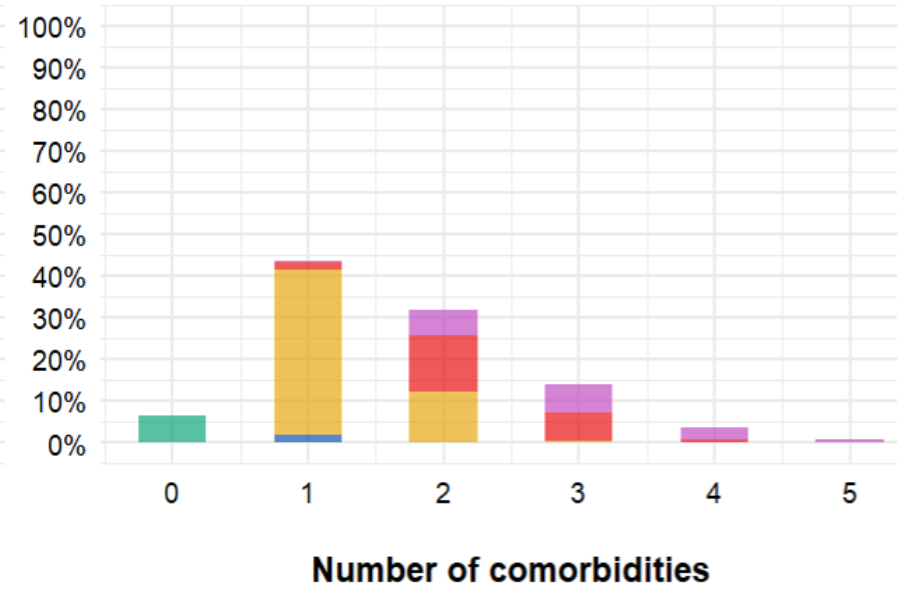
| Women | | | | | Men | | | | |
|-------------------|---------|---------|---------|-----------|-------------------|---------|---------|---------|-----------|
| | Stage 0 | Stage 1 | Stage 2 | Stage ≥ 3 | | Stage 0 | Stage 1 | Stage 2 | Stage ≥ 3 |
| Medical | 5.4% | 4.2% | 90.4% | 29.4% | Medical | 3.0% | 5.2% | 91.8% | 40.6% |
| Mental | 26.8% | 61.9% | 29.6% | NA | Mental | 29.7% | 65.1% | 14.4% | NA |
| Functional | 38.2% | 75.3% | 18.5% | NA | Functional | 38.5% | 74.8% | 15.1% | NA |

Percentages do not add up to 100% as there can be overlap between definitions. n=14844.

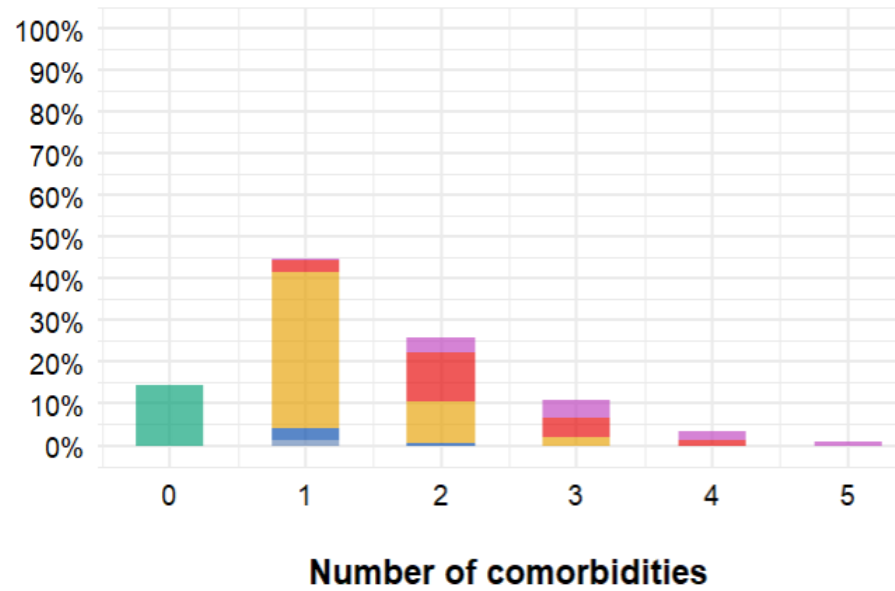
Mexico 2006



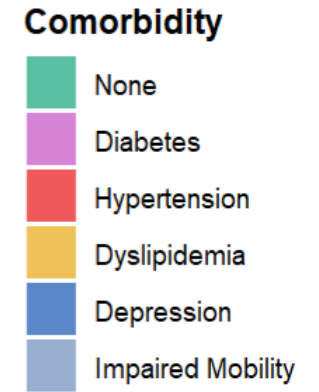
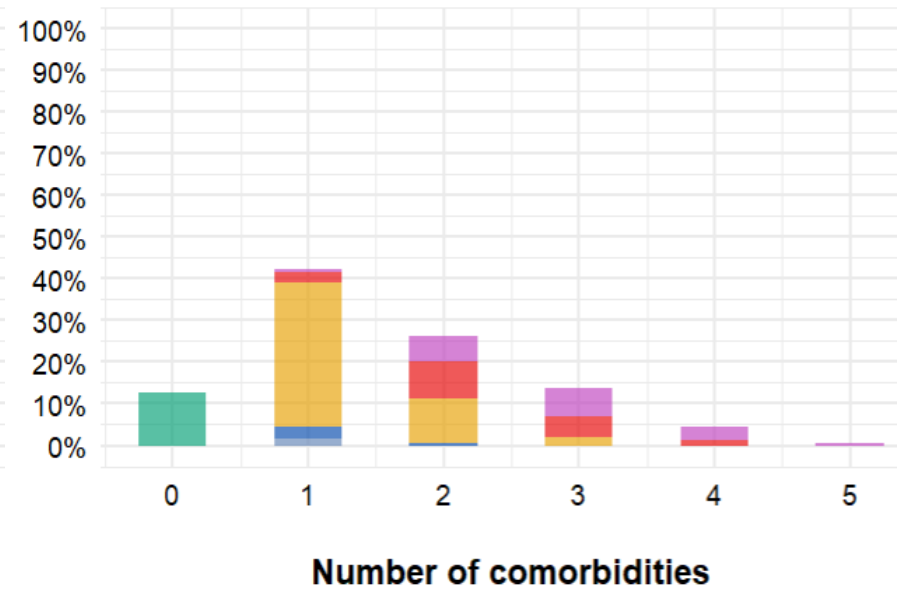
Mexico 2012

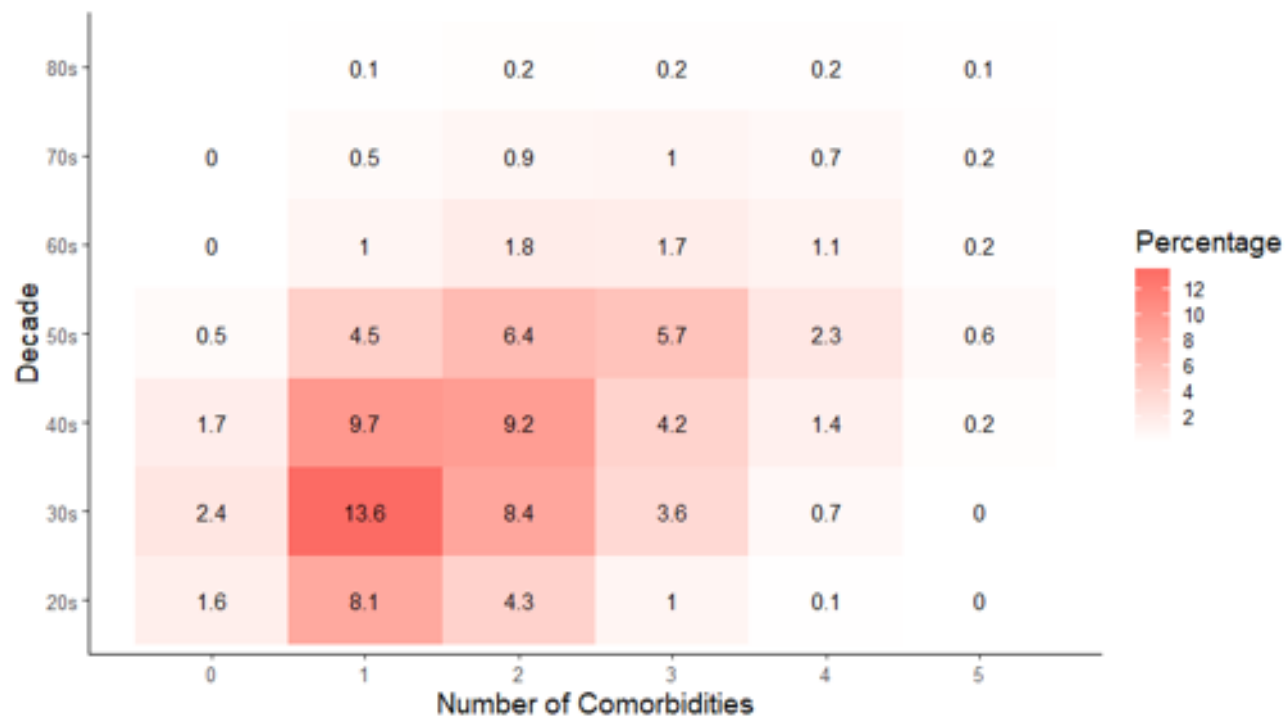
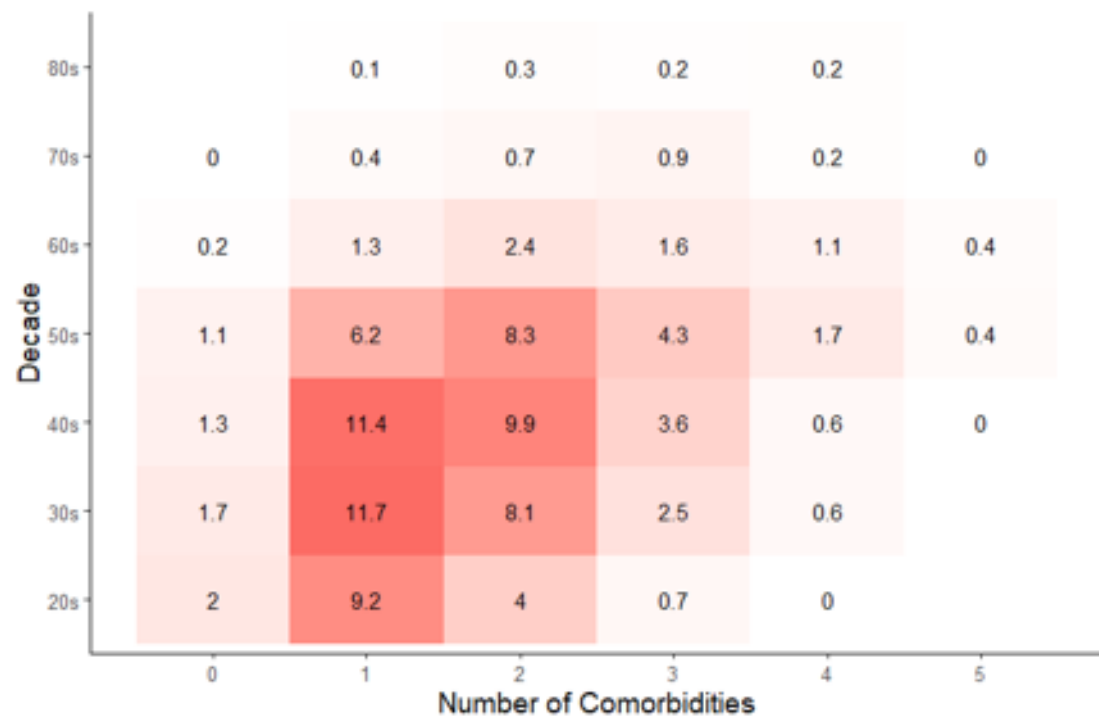


Mexico 2018

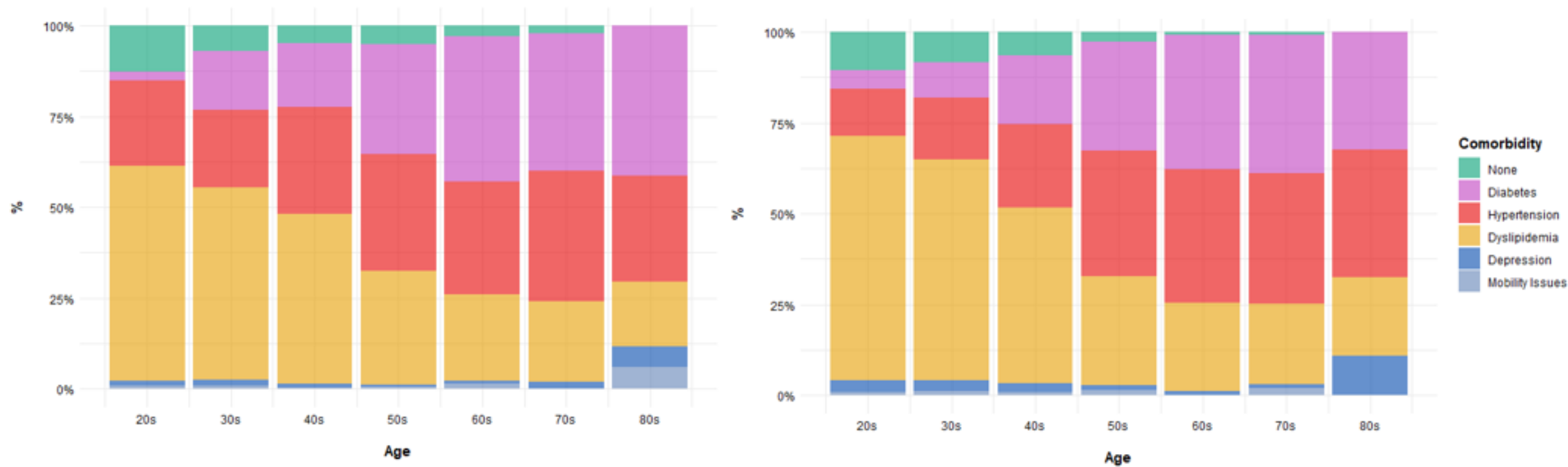


Mexico 2022





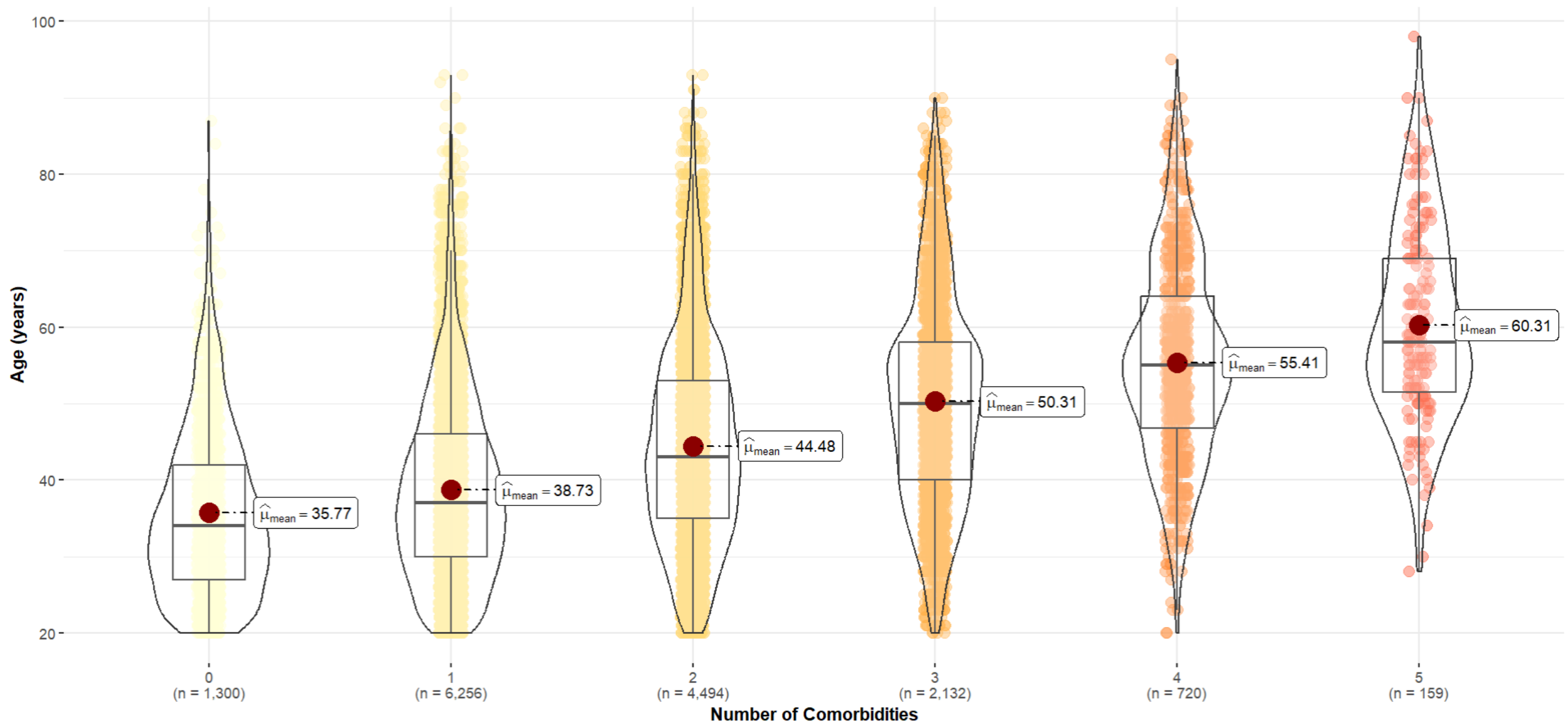
Left in Men (n = 2029), right in Women (n = 4876).



Left in Men (n = 2029), right in Women (n = 4876).

Age by Number of Comorbidities

Comorbidities \sim Age($\beta_1=0.03$), $R^2 = 16\%$, $p = 2 \times 10^{-16}$



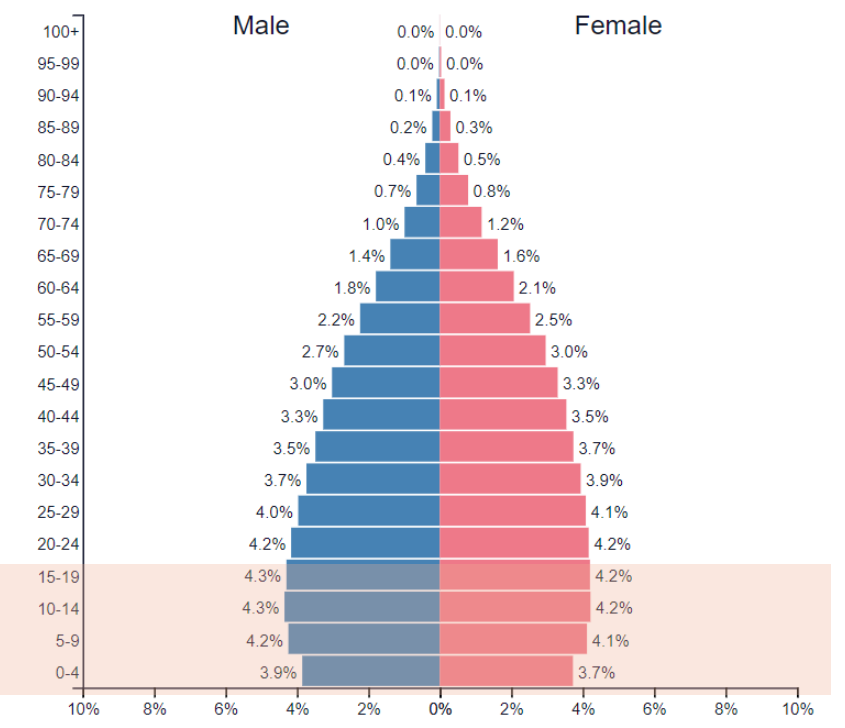
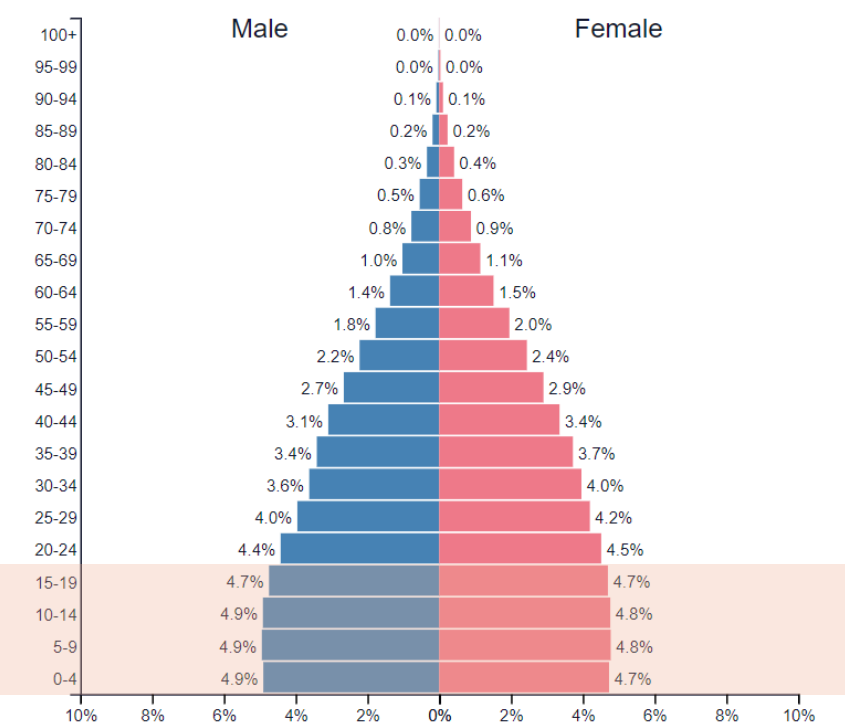
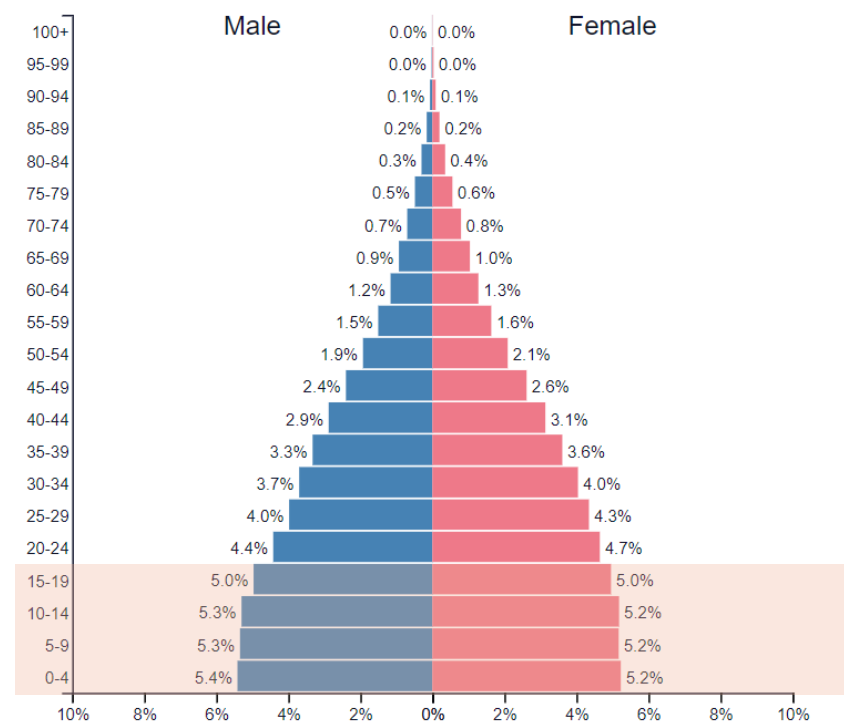
| Model | RMSE | R² |
|---|-------------|----------------------|
| Number of comorbidities ~ Age | 0.95 | 16% |
| Number of comorbidities ~ Age + Sex | 0.95 | 17% |
| Number of comorbidities ~ Age + Sex + BMI | 0.94 | 19% |

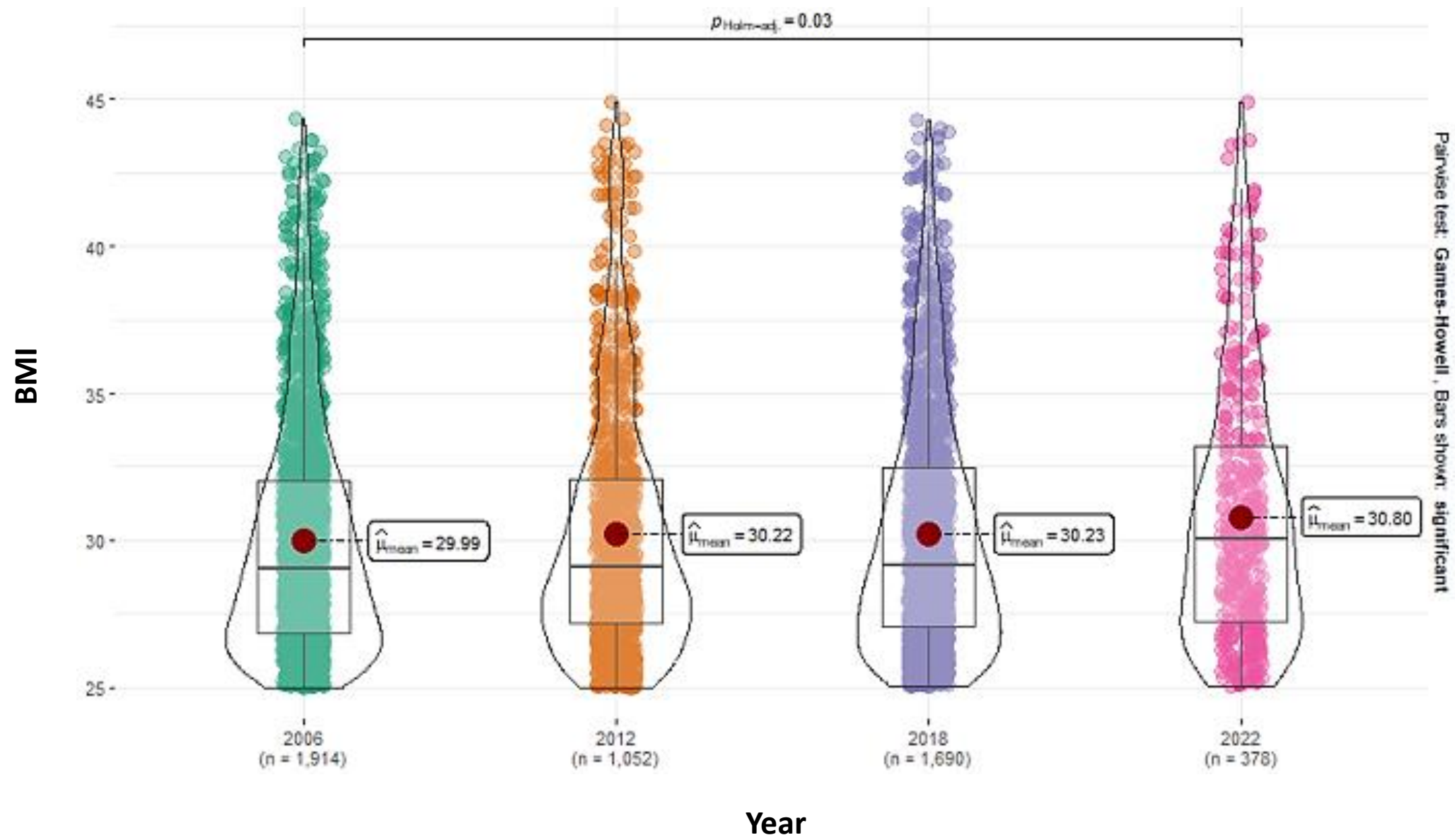
Explained variability in the number of obesity-associated comorbidities by different multivariable linear models. RMSE = Root Mean Square Error.

Mexico ▾
 2006
 Population: 106,886,789

Mexico ▾
 2012
 Population: 115,755,909

Mexico ▾
 2022
 Population: 127,504,125





Conclusions

- As in the rest of the world, obesity is a highly prevalent disease in Latin America.
- “Well-being comorbidities” are highly prevalent among metabolically healthy obese individuals.
- The number of comorbidities has a strong association with age. Therefore, developing the first or additional comorbidities may simply be a matter of time.
- The proportion of people with obesity but without comorbidities has decreased over time. This is likely a result of an ageing population, and declining age-specific morbidity.

THANK YOU