



Article review: MCPS and snipar

ROBERTO OLVERA-HERNANDEZ

*Centre for Genomic Sciences (CCG),
National Autonomous University of Mexico (UNAM)*

Biweekly meeting, February 18, 2025



Overview

Over **150,000 participants** were recruited in two districts between **1998 and 2004**.

- ▶ Baseline questionnaire.
- ▶ Blood samples.
- ▶ Physical measurements.
- ▶ Linkage to mortality.

COHORT PROFILE

Cohort Profile: The Mexico City Prospective Study

Roberto Tapia-Conyer,¹ Pablo Kuri-Morales,² Jesús Alegre-Díaz,² Gary Whitlock,^{3*}
Jonathan Emberson,³ Sarah Clark,² Richard Peto³ and Rory Collins³

(b) Mexico City



Figure: Map showing the location of the MCPS districts (Tapia-Conyer et al. 2006).



Baseline data

Socio-demographic

- ▶ Age and sex
- ▶ Area of residence
- ▶ Marital status
- ▶ Educational achievement
- ▶ Occupation
- ▶ Income
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- ▶ Diet (fruit/vegetables, fried food, types of oil)
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- ▶ Physical activity
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- ▶ Hysterectomy
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- ▶ Plasma & buffy coat
- ▶ HbA1c and other essays
- ▶ NMR metabolomics (e.g. fatty acids, cholines, lipoprotein subclasses, etc.)

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Prior diseases and medications

Participants were asked if they had ever been diagnosed with any of the listed diseases (binary: Yes or No).



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- ▶ $n = 141,046$ individuals
- Variants:**
- ▶ *Total:* 9.3 million.
 - ▶ *Coding regions:* 4.0 million in 19,110 genes.
 - ▶ *Unique MCPS:* 1.4 million.



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Whole-Genome Sequencing (WGS)

- ▶ $n = 9,950$ individuals



Family networks

The levels of *relatedness* were:

- ▶ much higher than those from the **UK Biobank (UKB)**.
- ▶ comparable with the **Geisinger Health Study (GHS)**—both MCPS and GHS recruited in *close proximity*.

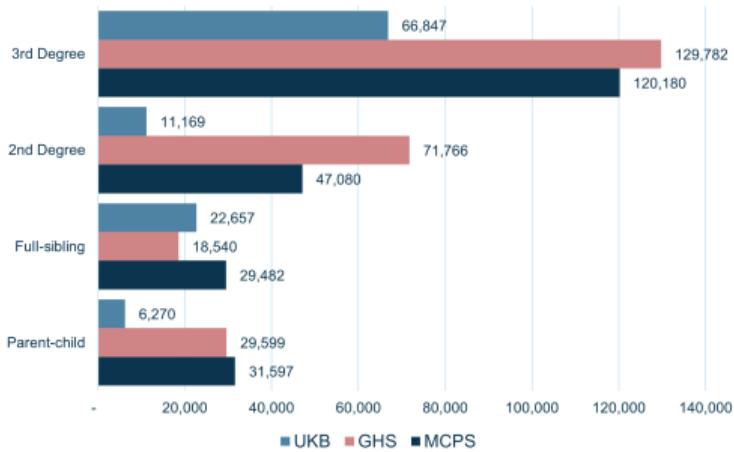


Figure: Comparison of network sizes in MCPS, UKB and GHS. Data extracted from Supplementary Table 25 (Ziyatdinov et al. 2023).



Family networks

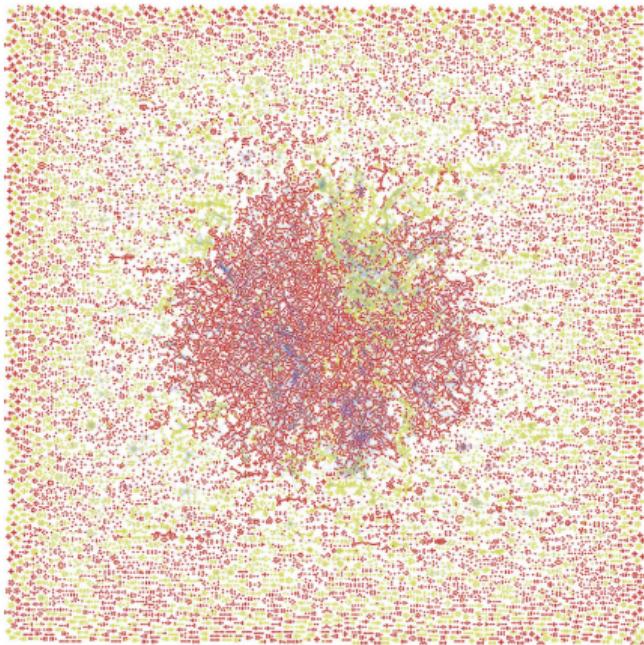


Figure: Graph of second-degree family networks of size four or greater (Ziyatdinov et al. 2023).



Family networks

column

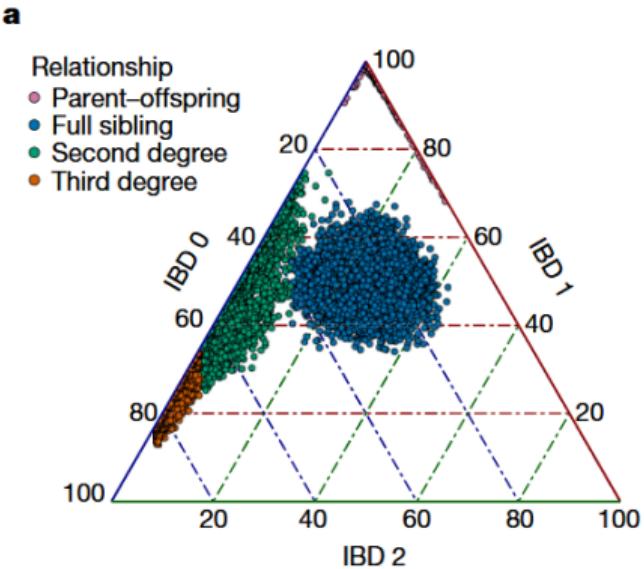


Figure: Percentage of the genome.



Test for code (BASH)

```
1      #!/bin/bash
2
3      # Quick System Info and Cleanup
4      echo "System Info:"; uname -a
5      echo "Disk Usage:"; df -h | grep '^/dev'
6      echo "Cleaning /tmp..."; sudo rm -rf /tmp/*
7      echo "Updating System..."; sudo apt-get update && sudo apt-get upgrade -y
8      echo "Done!"
```



References



Tapia-Conyer, R., Kuri-Morales, P., Alegre-Díaz, J., Whitlock, G., Emberson, J., Clark, S., Peto, R., & Collins, R. (2006). *International Journal of Epidemiology*, 35(2), 243–249. <https://doi.org/10.1093/ije/dyl042>



Ziyatdinov, A., Torres, J., Alegre-Díaz, J., Backman, J., Mbatchou, J., Turner, M., Gaynor, S. M., Joseph, T., Zou, Y., Liu, D., Wade, R., Staples, J., Panea, R., Popov, A., Bai, X., Balasubramanian, S., Habegger, L., Lanche, R., Lopez, A., ... Tapia-Conyer, R. (2023). *Nature*, 622(7984), 784–793. <https://doi.org/10.1038/s41586-023-06595-3>