

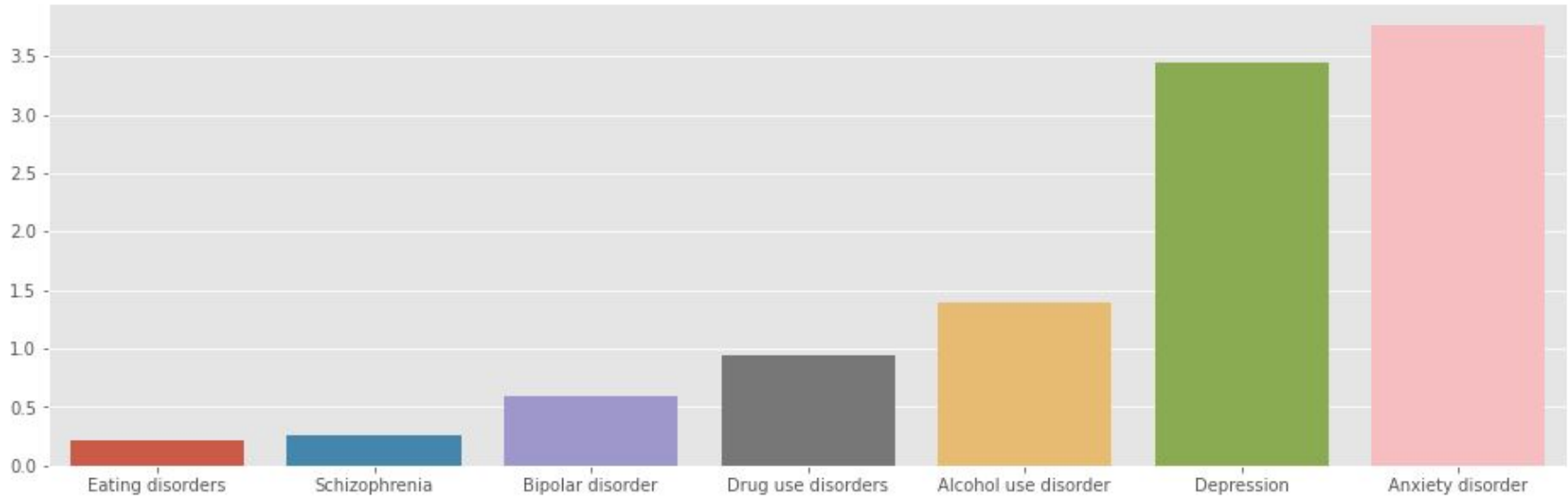
PREVALENCE OF MENTAL HEALTH AND
SUBSTANCE ABUSE DISORDERS

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**DEPRESSION IN DATA:
A PREDICTIVE REGRESSION MODEL**

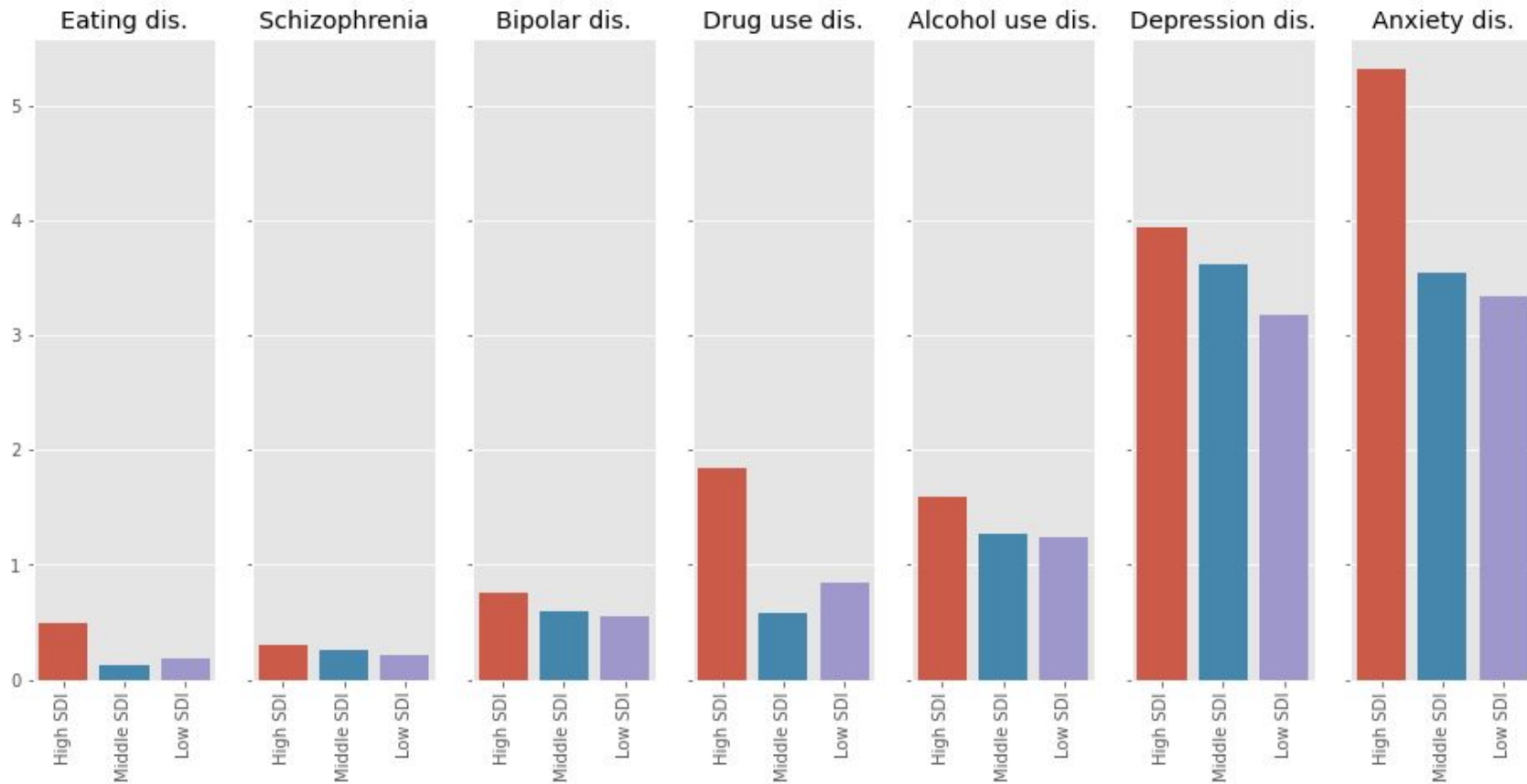
SERGI GARRIGA & LAZARUS KON

Introduction: Mental Health Worldwide, 2017

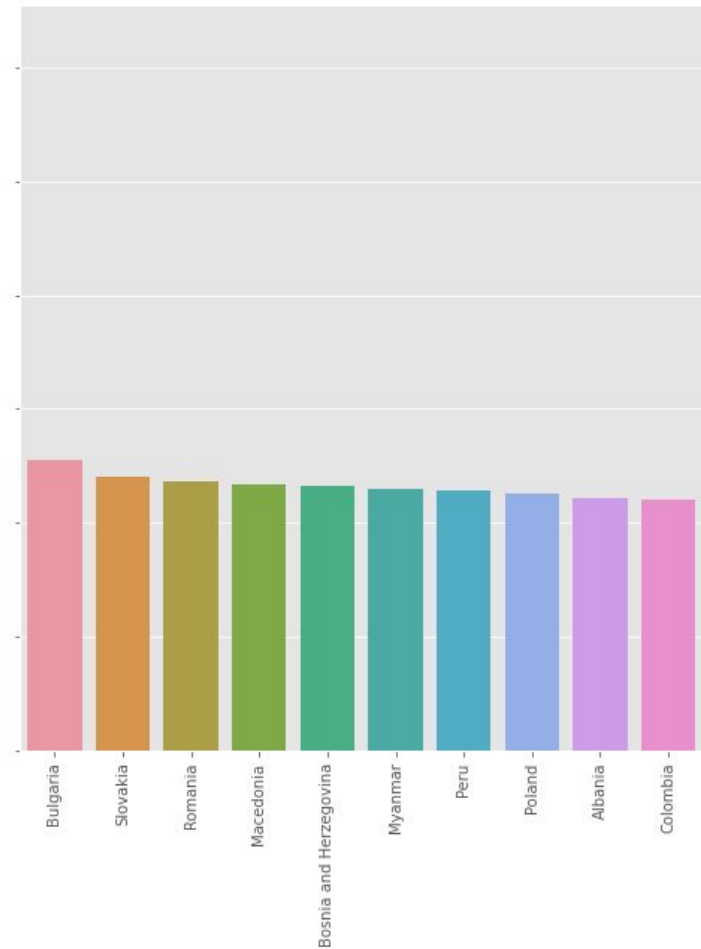
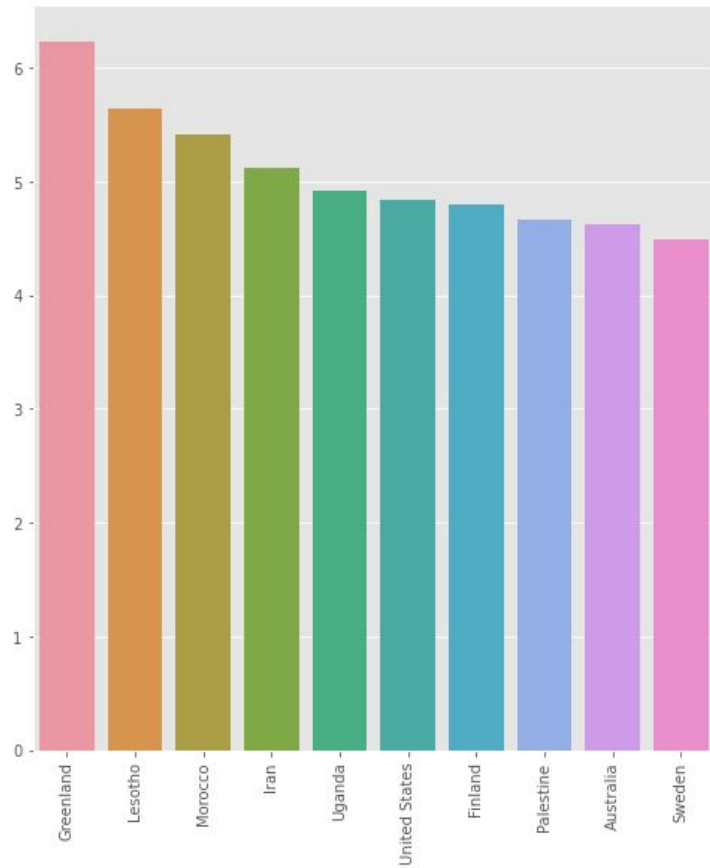


- ❖ Why does mental health matter?
 - About 10,5% of the *global* population (Over 790m people!) have suffered from mental of substance abuse disorders in 2017.
- ❖ Why is this scary?
 - Data is pre-pandemic and that's just the *diagnosed* disorders.

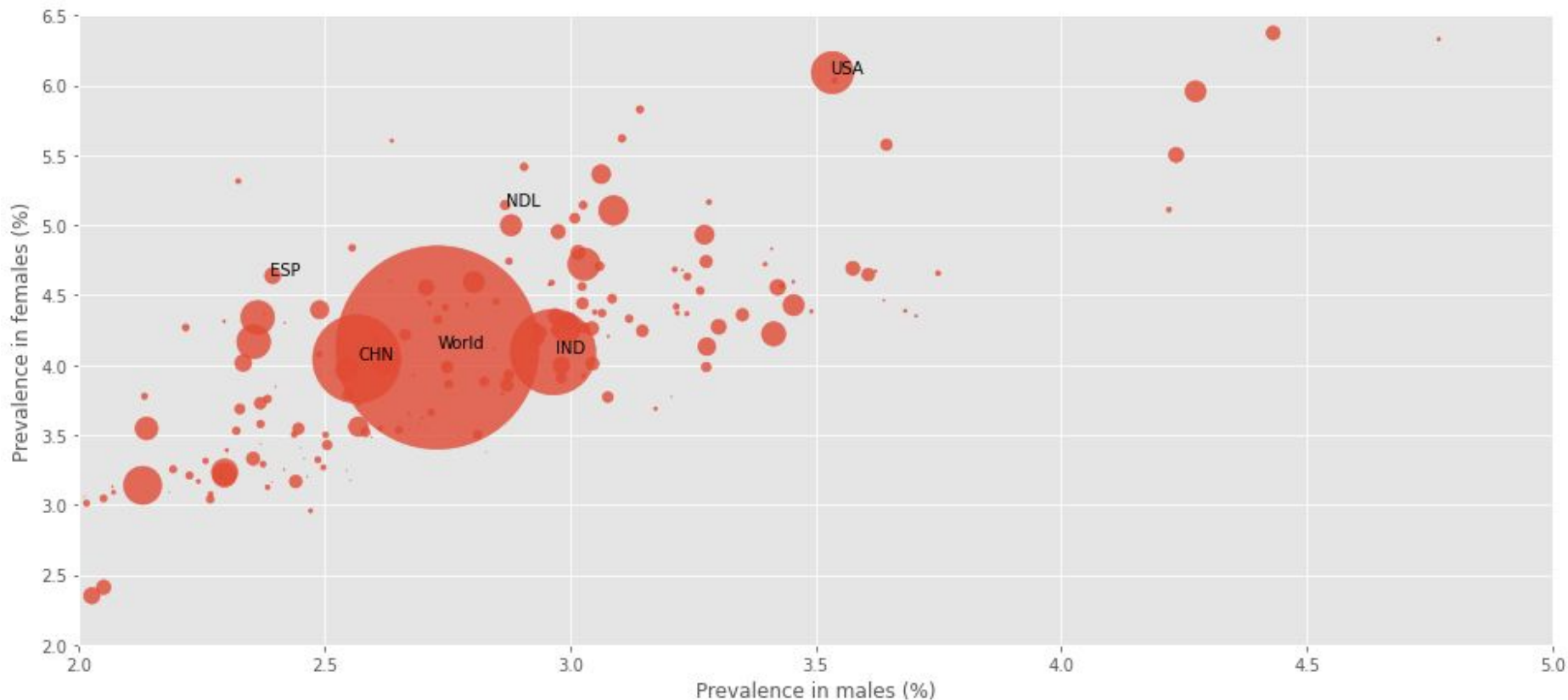
Mental Health Worldwide by SDI, 2017



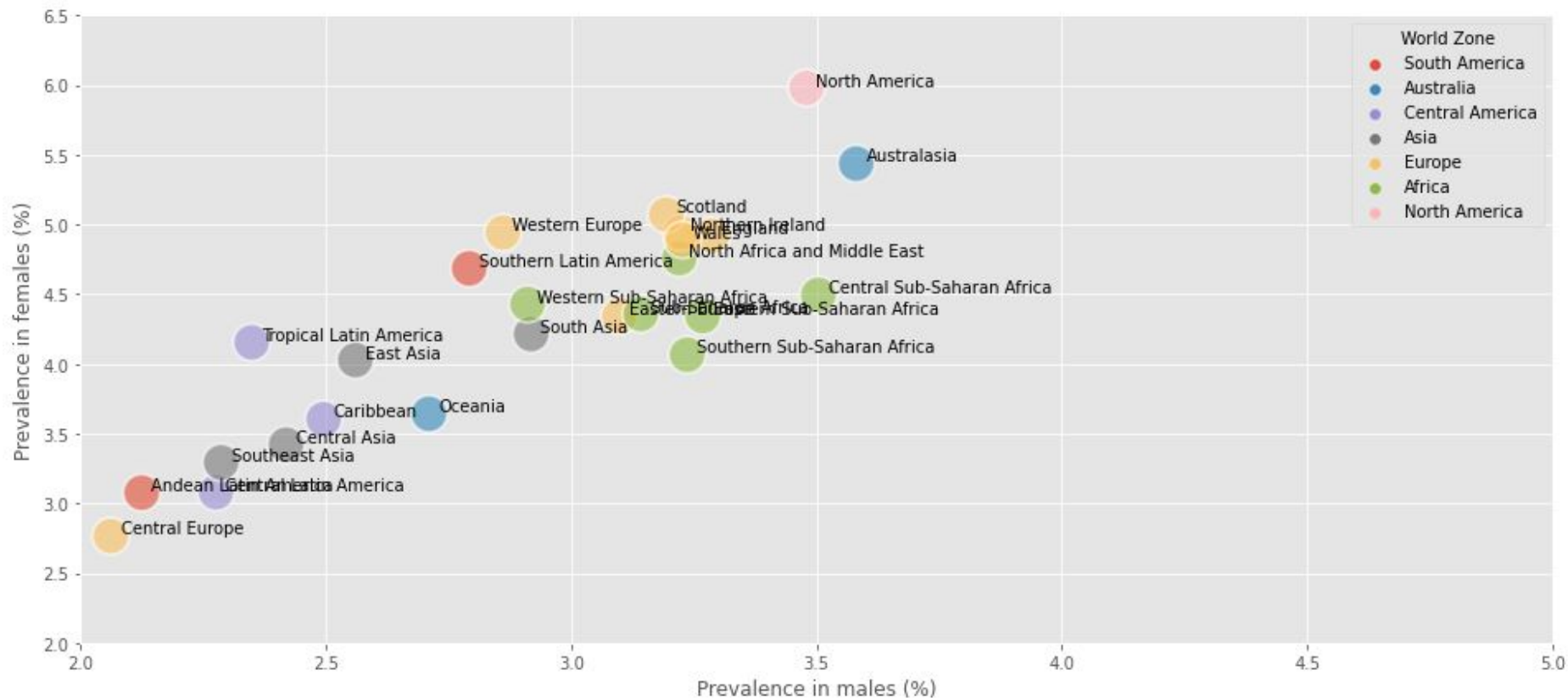
Prevalence of Depression Worldwide, 2017



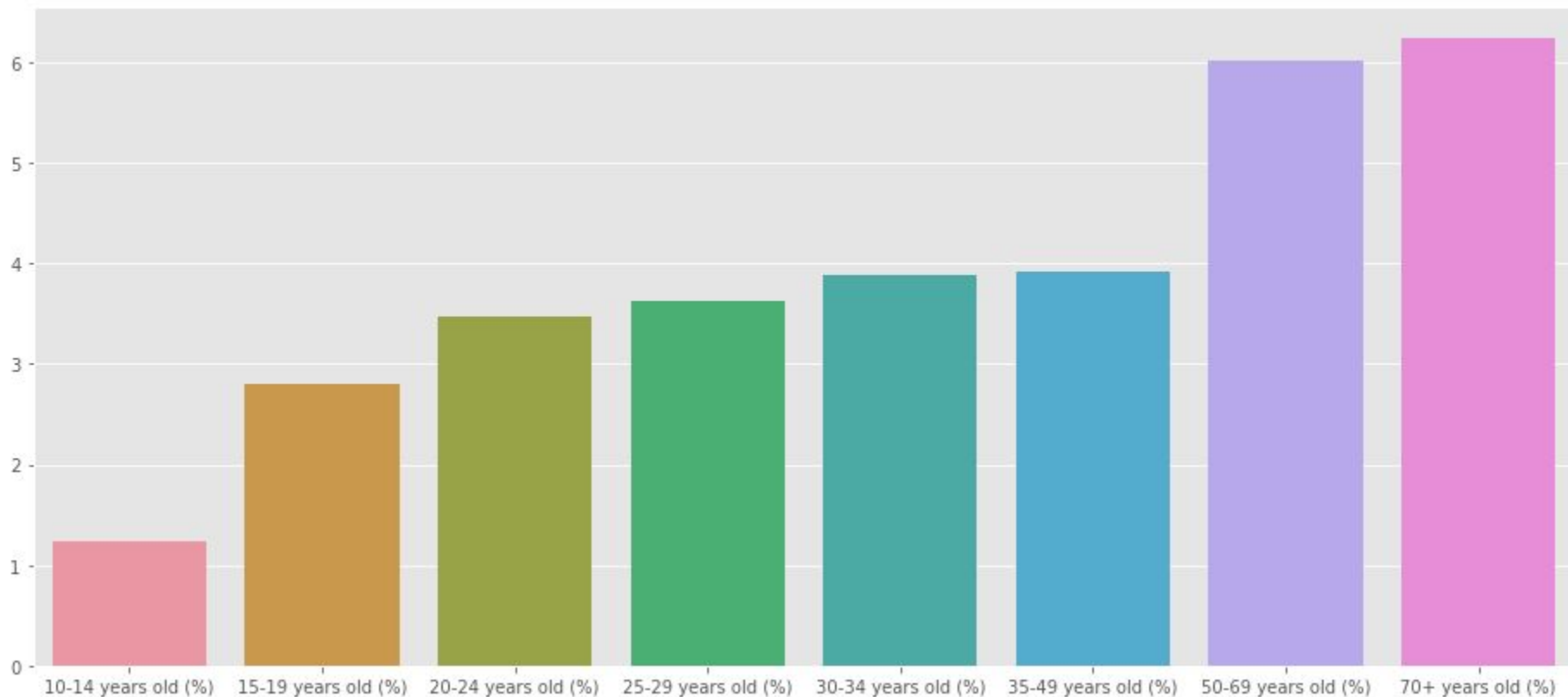
Prevalence of Depression by Gender (countries), 2017



Prevalence of Depression by Gender (regions), 2017



Prevalence of Depression by Age, 2017



Building a Model to Understand Depression

- **TARGET:**

Explaining our data on the column depression (global data; 1990-2017) based on other important parts of this dataset.

- **DATA:**

To explore this we are using data from three different tabs of our dataset. We call the explanatory variables our model's attributes.

- **HYPOTHESIS:**

We expect gender to be important mostly for females. Certain age groups are probably going to score a higher depression diagnosis/rate. Finally, we expect other mental disorders to not dramatically explain depressive prevalence.

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Taking it a step further: Can our model predict which factors are important for diagnosing depression?

Model Performance (Linear Regression)

OUR MODEL:

r^2 scores on the train: 0.9986

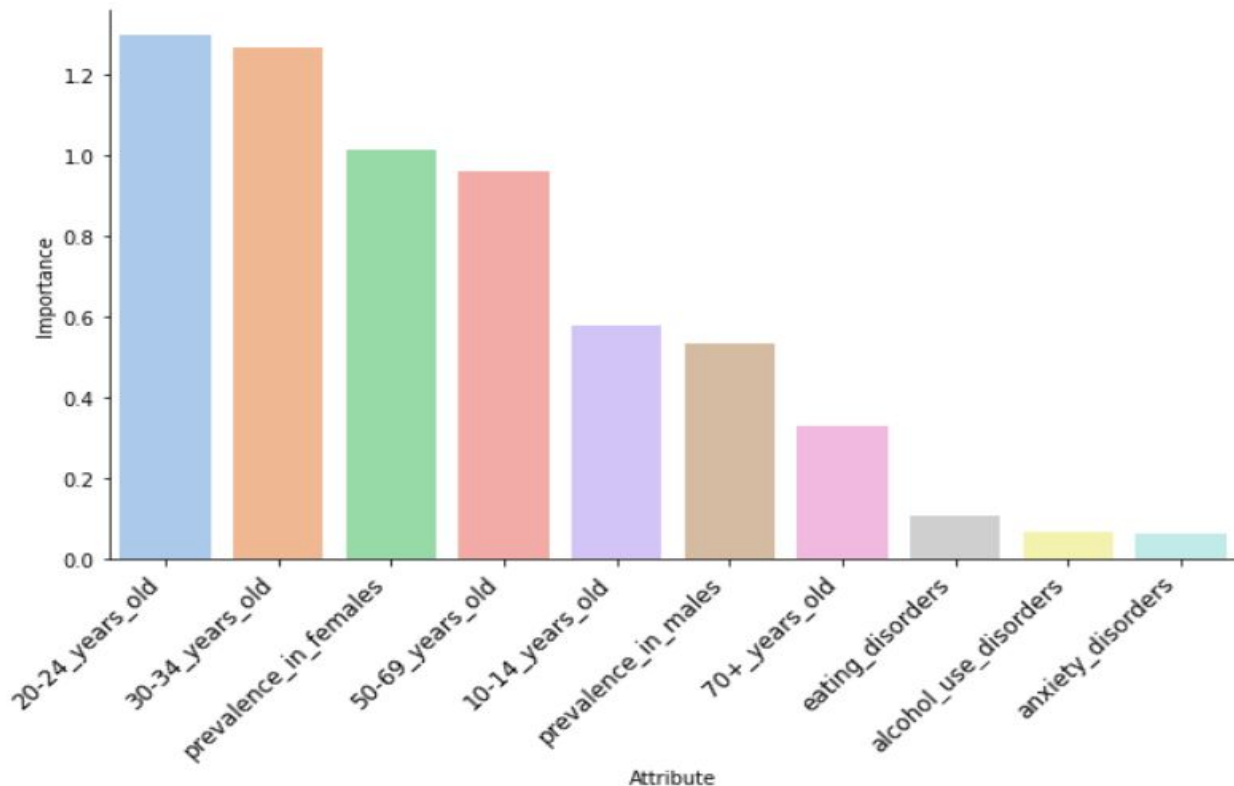
r^2 scores on the test: 0.9985

MSE: 0.0006

EXAMPLES:

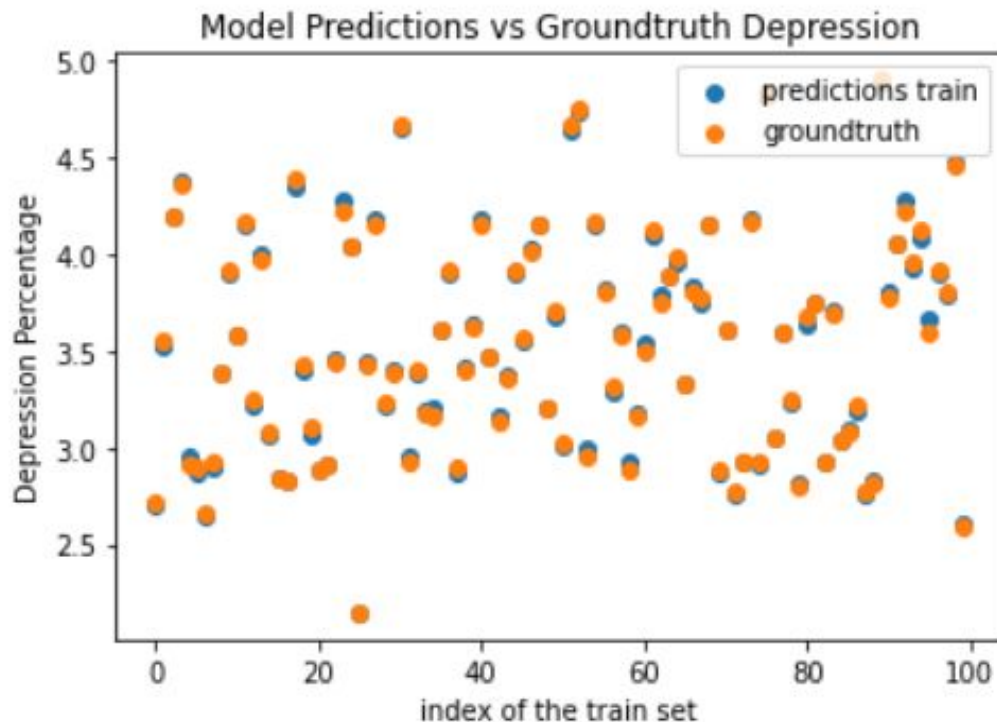
Perfect r^2 score : If $r^2 = 1$

Perfect MSE score: If MSE = 0



Note: Negative relationship with depressive prevalence: 15-19 years old & bipolar disorder

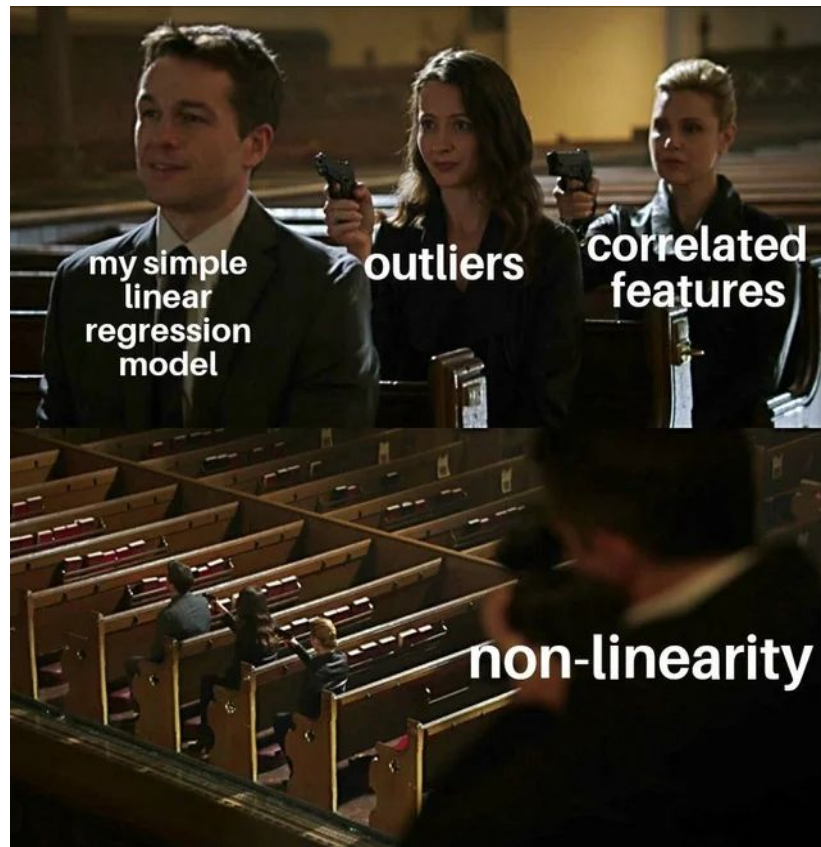
Predictions & Conclusions



Things to keep in mind:

- Data from over 27 years.
- Data from all around the world.
- This could be a strong predictive model of depressive rates and prevalence.
- Women worldwide between 20-24 or 30-34 (and not older people) consist the group to most likely experience depression.

Thank you for your attention!



References

Dataset: Prevalence of mental health and substance use disorders via Data.World

(<https://data.world/vizzup/mental-health-depression-disorder-data/workspace/file?filename=Mental+health+Depression+disorder+Data.xlsx>)

Other references:

<https://www.mentalhealth.gov/basics/what-is-mental-health>

<https://www.healthdata.org/taxonomy/glossary/socio-demographic-index-sdi>

Tools used:

MySQL, Jupyter Notebook, Excel

Depression & Suicide Rate, 2017

