

HOSEA Aim I – PPI, Anion Gap, Logistic Regression

Simon Fontaine

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1 Logistic Regression

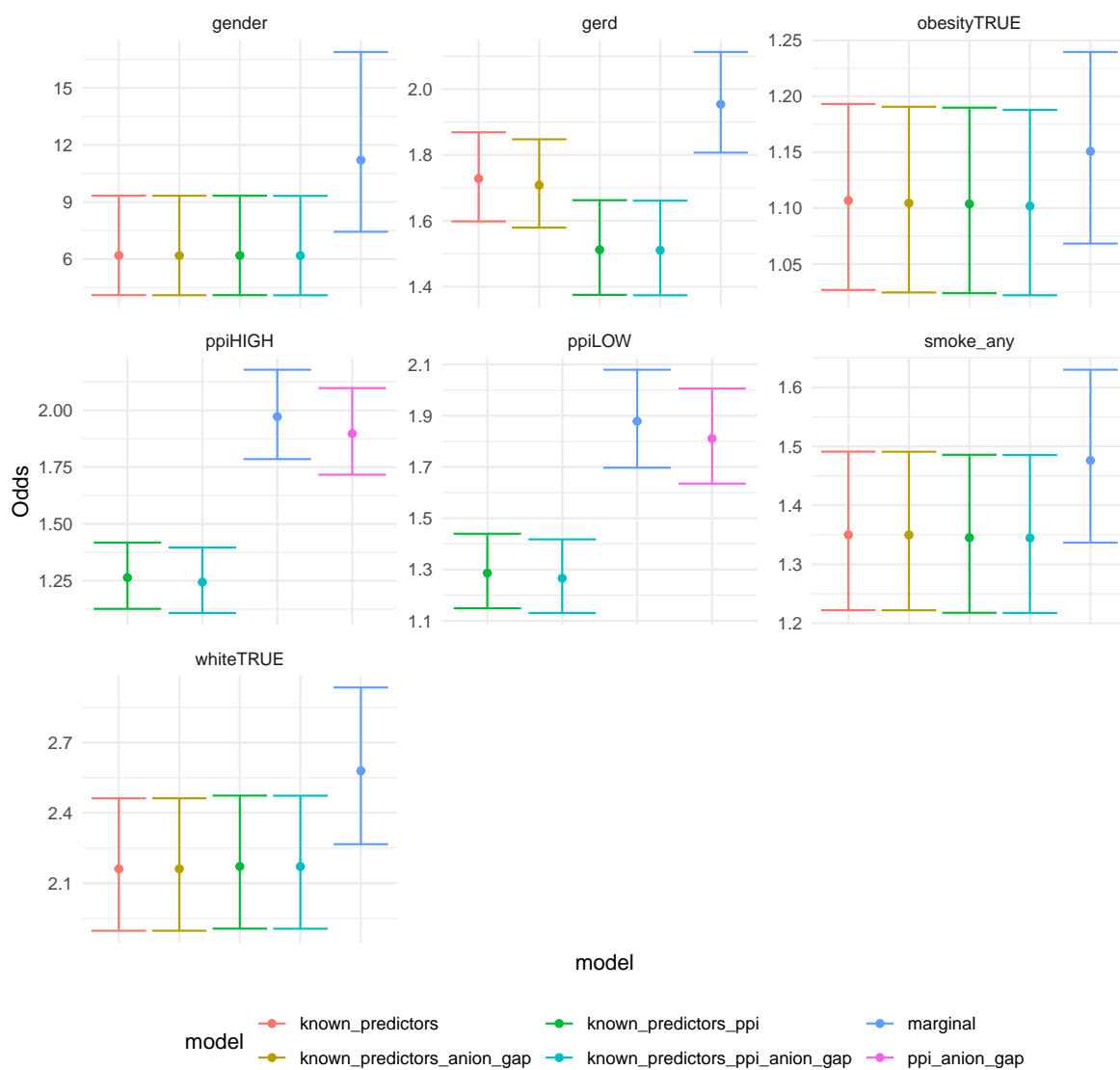
Setting

- I fitted a few logistic regression models with small changes in the set of predictors to see how things change when we add/remove one
- Known predictors: age, obesity (BMI>30), sex, gerd, smoking(any), white
- Extra predictors: PPI (None, Low, High; cutoff: mean >20) and Anion gap (using the mean of each component)
- Age and Anion gap fitted using splines; everything is main-effects only
- I also include the marginal models for comparison
- A model with the interaction between PPI and anion gap (adjusting for all known predictors also)

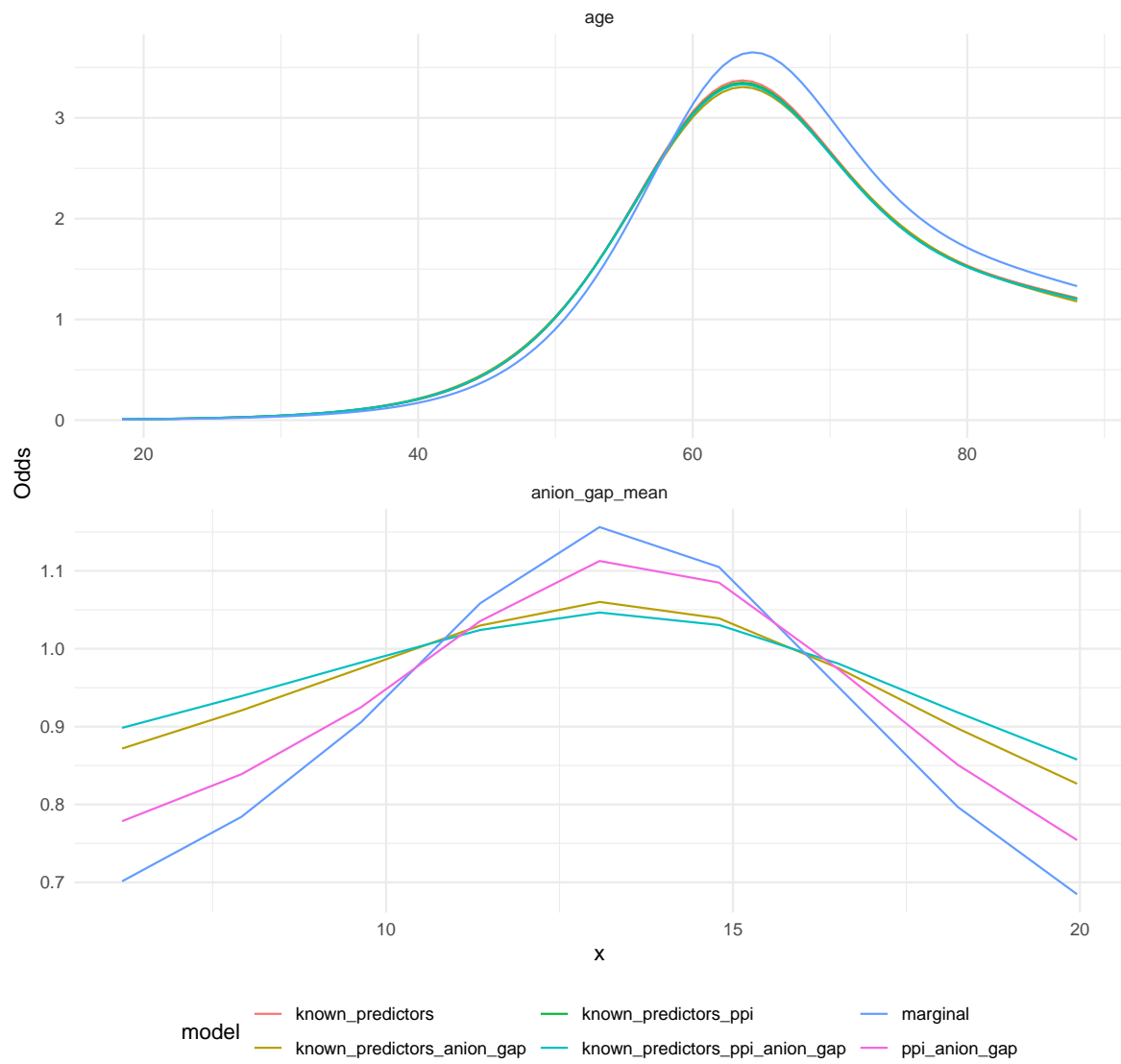
Some notable observations:

- Gerd seems to have an interaction with PPI but not the anion gap: indeed, including only the anion gap doesn't change the estimate for Gerd much, but including PPI does (maybe PPI is confounded by Gerd, which would be why we find PPI not to be important?)
- Including the Anion gap changes PPI a little bit by decreasing the effect
- Reversely, including PPI does change the Anion gap a little by attenuating the effect: these two last observations would indicate some confounding between PPI and The Anion gap
- PPI does seem to be associated with the outcome; there doesn't seem to be much of a difference between low and high (might be because of my definition)
- PPI seem to amke the anion gap less variable?
- There seems to be an interaction between PPI and anion gap: almost no effect of anion gap given no PPI. Unclear what is the difference with the main effect model only when looking at the peak.

Logistic regression: estimate comparison



Logistic regression: splines comparison



Logistic regression: splines by PPI level

