ADA Final Project: HPV and Insurance Status

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```
##       SEQN           SDDSRVYR   SDMVPSU         WTINT2YR        SDMVSTRA
##   Min.   :73557   Min.   :8   Min.   :1.000   Min.   :  3698   Min.   :104.0
##   1st Qu.:76101   1st Qu.:8   1st Qu.:1.000   1st Qu.: 12754   1st Qu.:107.0
##   Median :78644   Median :8   Median :1.000   Median : 20233   Median :111.0
##   Mean   :78644   Mean   :8   Mean   :1.484   Mean   : 30585   Mean   :110.9
##   3rd Qu.:81188   3rd Qu.:8   3rd Qu.:2.000   3rd Qu.: 36280   3rd Qu.:115.0
##   Max.   :83731   Max.   :8   Max.   :2.000   Max.   :167885   Max.   :118.0
##
##                      race.eth           age              pir
##   Mexican                :1730   Min.   : 0.00   Min.   :0.000
##   Other Hispanic         : 960   1st Qu.:10.00   1st Qu.:0.870
##   White                  :3674   Median :26.00   Median :1.705
##   African American       :2267   Mean   :31.48   Mean   :2.252
##   Asian                  :1074   3rd Qu.:52.00   3rd Qu.:3.607
##   Other incld Multiracial: 470   Max.   :80.00   Max.   :5.000
##                                                  NA's   :785
##                  educ        hpv         IMQ040           IMQ070
##   <9th              : 455   Yes : 877   Length:10175     Length:10175
##   9th to 11th       : 791   No  :4805   Class :character Class :character
##   HS grad/GED       :1303   NA's:4493   Mode  :character Mode  :character
##   Some College/AA   :1770
##   College Grad or above:1443
##   NA's              :4413
##
##   h.insur
##   Yes :8594
##   No  :1570
##   NA's:  11
##
##
##
##


##       SEQN           SDDSRVYR   SDMVPSU         WTINT2YR        SDMVSTRA
##   Min.   :73558   Min.   :8   Min.   :1.000   Min.   :  8290   Min.   :104.0
##   1st Qu.:76161   1st Qu.:8   1st Qu.:1.000   1st Qu.: 22117   1st Qu.:107.0
##   Median :78706   Median :8   Median :1.000   Median : 29410   Median :111.0
##   Mean   :78664   Mean   :8   Mean   :1.485   Mean   : 43294   Mean   :110.9
##   3rd Qu.:81124   3rd Qu.:8   3rd Qu.:2.000   3rd Qu.: 59472   3rd Qu.:114.0
##   Max.   :83729   Max.   :8   Max.   :2.000   Max.   :157423   Max.   :118.0
##        age                      race.eth                   educ
##   Min.   :20.00   Mexican                : 450   <9th              : 178
```

```
##   1st Qu.:30.00   Other Hispanic          : 291   9th to 11th          : 438
##   Median :40.00   White                   :1428   HS grad/GED          : 779
##   Mean   :39.46   African American        : 689   Some College/AA      :1116
##   3rd Qu.:49.00   Asian                   : 453   College Grad or above: 937
##   Max.   :59.00   Other incld Multiracial: 137
##       pir          h.insur      hpv
##  Min.   :0.00   Yes:2517   Yes: 276
##  1st Qu.:1.00   No : 931   No :3172
##  Median :2.12
##  Mean   :2.50
##  3rd Qu.:4.19
##  Max.   :5.00


## # A tibble: 1 x 1
##       n
##   <int>
## 1  3448


##      mean     SE
## age 27.17 0.6066


##       mean     SE
## age 40.751 0.3674


##     variance     SE
## age   8.1274 12.537


##     variance     SE
## age    11.22 3.7566


##                                mean     SE
## race.ethMexican               7.7088 0.0175
## race.ethOther Hispanic        5.9125 0.0199
## race.ethWhite                61.6602 0.0482
## race.ethAfrican American     14.2063 0.0357
## race.ethAsian                 5.8660 0.0146
## race.ethOther incld Multiracial  4.6461 0.0114


##                                mean     SE
## race.ethMexican              10.0872 0.0176
## race.ethOther Hispanic        5.8744 0.0103
## race.ethWhite                63.0188 0.0337
## race.ethAfrican American     11.9023 0.0169
## race.ethAsian                 5.8723 0.0076
## race.ethOther incld Multiracial  3.2450 0.0057


##                            mean     SE
## educ<9th                  1.8831 0.0080
## educ9th to 11th           8.3157 0.0164
## educHS grad/GED          17.0554 0.0234
## educSome College/AA      45.6138 0.0273
## educCollege Grad or above 27.1321 0.0399
```

```
##                            mean     SE
## educ<9th                 3.7328 0.0051
## educ9th to 11th         10.1622 0.0112
## educHS grad/GED         22.6241 0.0156
## educSome College/AA     31.4507 0.0128
## educCollege Grad or above 32.0301 0.0247


##             mean    SE
## h.insurYes 83.733 0.019
## h.insurNo  16.267 0.019


##             mean     SE
## h.insurYes 77.557 0.0167
## h.insurNo  22.443 0.0167


##     0.25      0.5     0.75
## pir 1.03 2.134235 4.423855


##     0.25 0.5 0.75
## pir 1.27 2.9    5


##
##  Pearson's X^2: Rao & Scott adjustment
##
## data:  svychisq(~age + hpv, design = svydsgn.hpv, statistic = c("Chisq"),    na.rm = TRUE)
## X-squared = 554.76, df = 39, p-value < 2.2e-16


##
##  Pearson's X^2: Rao & Scott adjustment
##
## data:  svychisq(~race.eth + hpv, design = svydsgn.hpv, statistic = c("Chisq"),    na.rm = TRUE)
## X-squared = 4.1775, df = 5, p-value = 0.4176


##
##  Pearson's X^2: Rao & Scott adjustment
##
## data:  svychisq(~educ + hpv, design = svydsgn.hpv, statistic = c("Chisq"),    na.rm = TRUE)
## X-squared = 24.696, df = 4, p-value = 8.25e-05


##
##  Pearson's X^2: Rao & Scott adjustment
##
## data:  svychisq(~h.insur + hpv, design = svydsgn.hpv, statistic = c("Chisq"),    na.rm = TRUE)
## X-squared = 5.7257, df = 1, p-value = 0.03029


##
##  Pearson's X^2: Rao & Scott adjustment
##
## data:  svychisq(~pir + hpv, design = svydsgn.hpv, statistic = c("Chisq"),    na.rm = TRUE)
## X-squared = 461.01, df = 395, p-value = 0.9987


## Warning: package 'jtools' was built under R version 3.6.3
```

```
## MODEL INFO:
## Observations: 3448
## Dependent Variable: hpv
## Type: Analysis of complex survey design
##  Family: quasibinomial
##  Link function: logit
##
## MODEL FIT:
## Pseudo-R² (Cragg-Uhler) = 0.14
## Pseudo-R² (McFadden) = 0.23
## AIC =  NA
##
## -----------------------------------------------------------------------
##                                  exp(Est.)  2.5%   97.5%  t val.    p      VIF
## ------------------------------- ----------- ------ ------- -------- ------ --------
## (Intercept)                        8.85     4.11   19.07    5.57    0.01
## age                                0.87     0.84    0.89  -10.49    0.00     9.09
## race.ethMexican                    0.78     0.46    1.33   -0.91    0.43    74.89
## race.ethOther Hispanic             0.83     0.51    1.37   -0.72    0.52    74.89
## race.ethAfrican American           1.12     0.72    1.72    0.50    0.65    74.89
## race.ethAsian                      0.91     0.52    1.61   -0.31    0.77    74.89
## race.ethOther incld                1.06     0.48    2.33    0.15    0.89    74.89
## Multiracial
## educ<9th                           1.43     0.61    3.34    0.83    0.47   182.31
## educ9th to 11th                    1.17     0.77    1.78    0.75    0.51   182.31
## educSome College/AA                1.89     1.50    2.39    5.38    0.01   182.31
## educCollege Grad or above          1.75     1.09    2.81    2.33    0.10   182.31
## h.insurNo                          0.48     0.35    0.66   -4.46    0.02     2.36
## pir                                0.94     0.85    1.04   -1.17    0.32     3.25
## -----------------------------------------------------------------------
##
## Estimated dispersion parameter = 1.48


## Wald test for age
##  in svyglm(formula = hpv ~ age + race.eth + educ + h.insur + pir,
##     design = svydsgn.hpv, family = quasibinomial())
## F =  110.0143  on  1  and  3  df: p= 0.0018504


## Wald test for race.eth
##  in svyglm(formula = hpv ~ age + race.eth + educ + h.insur + pir,
##     design = svydsgn.hpv, family = quasibinomial())
## F =  0.3647598  on  5  and  3  df: p= 0.84724


## Wald test for educ
##  in svyglm(formula = hpv ~ age + race.eth + educ + h.insur + pir,
##     design = svydsgn.hpv, family = quasibinomial())
## F =  8.033625  on  4  and  3  df: p= 0.059181


## Wald test for h.insur
##  in svyglm(formula = hpv ~ age + race.eth + educ + h.insur + pir,
##     design = svydsgn.hpv, family = quasibinomial())
## F =  19.88276  on  1  and  3  df: p= 0.021
```
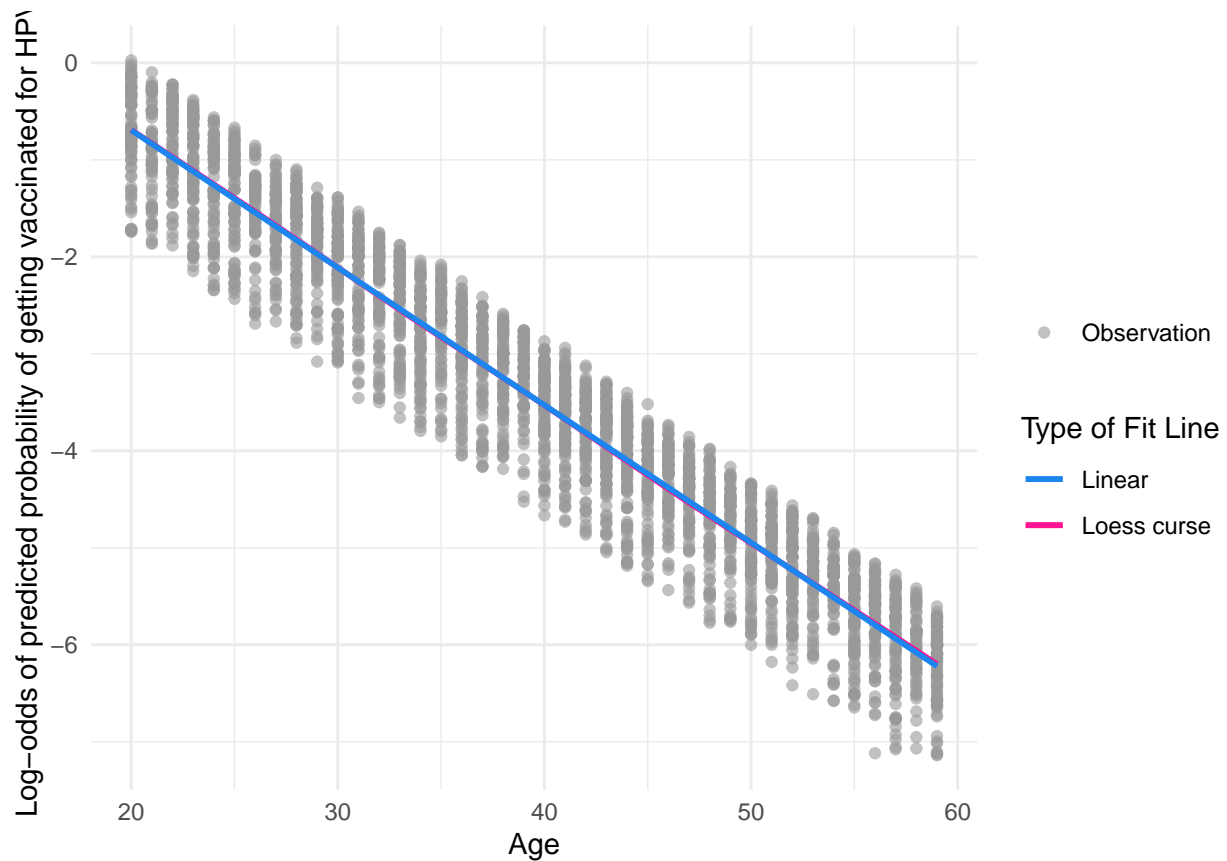
```
## Wald test for pir
##  in svyglm(formula = hpv ~ age + race.eth + educ + h.insur + pir,
##     design = svydsgn.hpv, family = quasibinomial())
## F =  1.380398  on  1  and  3  df: p= 0.3248
```

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

```
## `geom_smooth()` using formula 'y ~ x'
```



```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
## `geom_smooth()` using formula 'y ~ x'
```

```
## Warning: package 'dataMaid' was built under R version 3.6.3

##
## Attaching package: 'dataMaid'

## The following object is masked from 'package:dplyr':
##
##     summarize

## Warning: package 'expss' was built under R version 3.6.3

##
## Attaching package: 'expss'

## The following objects are masked from 'package:stringr':
##
##     fixed, regex

## The following objects are masked from 'package:purrr':
##
##     keep, modify, modify_if, transpose, when

## The following objects are masked from 'package:tidyr':
##
##     contains, nest
```

```
## The following object is masked from 'package:ggplot2':
##
##     vars


## The following objects are masked from 'package:dplyr':
##
##     between, compute, contains, first, last, na_if, recode, vars


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```

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