

Power Analysis

The following code was used to determine the power analysis for each logistic regression model.

#GAD7 All Athletes

```
##  
## Call:  
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,  
##      data = model.df)  
##  
## Deviance Residuals:  
##      Min        1Q      Median        3Q        Max  
## -0.5079  -0.5079  -0.0730  -0.0730   3.4437  
##  
## Coefficients:  
##              Estimate Std. Error z value Pr(>|z|)  
## (Intercept)   -5.9269    0.7080  -8.372 < 2e-16 ***  
## apsq_threshold  3.9441    0.7288   5.412 6.24e-08 ***  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## (Dispersion parameter for binomial family taken to be 1)  
##  
##      Null deviance: 341.10  on 1065  degrees of freedom  
## Residual deviance: 259.41  on 1064  degrees of freedom  
## (3076 observations deleted due to missingness)  
## AIC: 263.41  
##  
## Number of Fisher Scoring iterations: 8  
  
## apsq_threshold  
##      51.63043  
  
## Power for logistic regression  
##  
##           p0           p1      beta0      beta1      n alpha      power  
##      0.002659575 0.1210191 -5.926926 3.944111 1066  0.05 0.9962332  
##  
## URL: http://psychstat.org/logistic
```

#PHQ9 All Athletes

```
##  
## Call:  
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,  
##      data = model.df)  
##  
## Deviance Residuals:  
##      Min        1Q      Median        3Q        Max  
## -0.3628  -0.3628  -0.0516  -0.0516   3.6394
```

```
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -6.621     1.001  -6.617 3.66e-11 ***
## apsq_threshold  3.934     1.027   3.830 0.000128 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 206.52 on 1065 degrees of freedom
## Residual deviance: 164.09 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## AIC: 168.09
##
## Number of Fisher Scoring iterations: 9

## apsq_threshold
##           51.08844

## Power for logistic regression
##
##           p0          p1      beta0      beta1      n alpha      power
##           0.001329787 0.06369427 -6.621406 3.933558 1066  0.05 0.9054437
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Q9 All Athletes

```
##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.3020  -0.3020  -0.0516  -0.0516   3.6394
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -6.621     1.001  -6.617 3.66e-11 ***
## apsq_threshold  3.557     1.037   3.429 0.000607 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 157.7 on 1065 degrees of freedom
## Residual deviance: 129.7 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## AIC: 133.7
```

```
##
## Number of Fisher Scoring iterations: 9

## apsq_threshold
##      35.04667

## Power for logistic regression
##
##           p0           p1      beta0      beta1      n alpha      power
##      0.001329787 0.04458599 -6.621406 3.556681 1066  0.05 0.8381283
##
## URL: http://psychstat.org/logistic

#ASSQ All Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
##      data = model.df)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.9023  -0.4320  -0.4320  -0.4320   2.1991
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -2.3247     0.1280  -18.16  <2e-16 ***
## apsq_threshold  1.6364     0.1752   9.34  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 942.14  on 1065  degrees of freedom
## Residual deviance: 852.05  on 1064  degrees of freedom
## (3076 observations deleted due to missingness)
## AIC: 856.05
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
##      5.136399

## Power for logistic regression
##
##           p0           p1      beta0      beta1      n alpha      power
##      0.08909574 0.3343949 -2.324726 1.636352 1066  0.05      1
##
## URL: http://psychstat.org/logistic

#Alcohol All Athletes
```

```
##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.0866  -0.8024  -0.8024   1.2710   1.6062
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.96807    0.08164 -11.857 < 2e-16 ***
## apsq_threshold  0.75065    0.13984   5.368 7.97e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 1345.2  on 1065  degrees of freedom
## Residual deviance: 1316.6  on 1064  degrees of freedom
## (3076 observations deleted due to missingness)
## AIC: 1320.6
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      2.118385

## Power for logistic regression
##
##      p0      p1    beta0    beta1    n alpha    power
## 0.275266 0.4458599 -0.968067 0.7506541 1066 0.05 0.9999269
##
## URL: http://psychstat.org/logistic
```

#Drug All Athletes

```
##
## Call:
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.1964  -0.1964  -0.1155  -0.1155   3.1665
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -5.0066    0.4486 -11.160 <2e-16 ***
## apsq_threshold  1.0683    0.6093   1.753  0.0795 .
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##   Null deviance: 122.51  on 1065  degrees of freedom
## Residual deviance: 119.48  on 1064  degrees of freedom
## (3076 observations deleted due to missingness)
## AIC: 123.48
##
## Number of Fisher Scoring iterations: 7

## apsq_threshold
##      2.910389

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha      power
## 0.006648936 0.01910828 -5.006627 1.068287 1066  0.05 0.4066793
##
## URL: http://psychstat.org/logistic

#Food All Athletes

##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -2.286  -1.014  -1.014   1.350   1.350
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -0.3974    0.0536  -7.414 1.22e-13 ***
## apsq_threshold  2.9352    0.2231  13.155 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##   Null deviance: 2442.5  on 1761  degrees of freedom
## Residual deviance: 2115.8  on 1760  degrees of freedom
## (2380 observations deleted due to missingness)
## AIC: 2119.8
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
##      18.82609
```

```
## Power for logistic regression
##
##           p0           p1          beta0          beta1          n alpha power
##           0.4019337 0.9267516 -0.3974145 2.935244 1762 0.05      1
##
## URL: http://psychstat.org/logistic

#Males Only

#GAD7 Male Athletes

##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.2995  -0.0704  -0.0704  -0.0704   3.4645
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.999      1.001  -5.992 2.07e-09 ***
## apsq_threshold  2.917      1.101   2.650 0.00804 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 65.429  on 517  degrees of freedom
## Residual deviance: 55.045  on 516  degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 59.045
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##           18.48624

## Power for logistic regression
##
##           p0           p1          beta0          beta1          n alpha      power
##           0.002475248 0.04385965 -5.998937 2.917027 518 0.05 0.6205778
##
## URL: http://psychstat.org/logistic

#PHQ9 Male Athletes

##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
```

```

##      data = model.df.males)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -0.29950 -0.00002 -0.00002 -0.00002  2.50070
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -22.57    2397.85  -0.009   0.992
## apsq_threshold  19.48    2397.85   0.008   0.994
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 56.357  on 517  degrees of freedom
## Residual deviance: 41.045  on 516  degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 45.045
##
## Number of Fisher Scoring iterations: 21

## apsq_threshold
##      289642671

## Power for logistic regression
##
##              p0          p1      beta0      beta1      n alpha      power
##      1.583729e-10 0.04385965 -22.56607 19.48416 518  0.05 0.05000178
##
## URL: http://psychstat.org/logistic

#PHQ9 Q9 Male Athletes

##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -0.2995 -0.0704 -0.0704 -0.0704  3.4645
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.999      1.001  -5.992 2.07e-09 ***
## apsq_threshold  2.917      1.101   2.650 0.00804 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 65.429  on 517  degrees of freedom

```

```
## Residual deviance: 55.045 on 516 degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 59.045
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      18.48624

## Power for logistic regression
##
##           p0          p1      beta0      beta1  n alpha      power
##      0.002475248 0.04385965 -5.998937 2.917027 518  0.05 0.6205778
##
## URL: http://psychstat.org/logistic
```

#ASSQ Male Athletes

```
##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.9587  -0.4566  -0.4566  -0.4566   2.1506
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -2.2083     0.1666 -13.258 < 2e-16 ***
## apsq_threshold  1.6693     0.2558   6.525 6.78e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 452.57 on 517 degrees of freedom
## Residual deviance: 410.95 on 516 degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 414.95
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      5.308333

## Power for logistic regression
##
##           p0          p1      beta0      beta1  n alpha      power
##      0.0990099 0.3684211 -2.208274 1.669278 518  0.05 0.9999994
```



```
##
## URL: http://psychstat.org/logistic

#Alcohol Male Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.0891  -0.7672  -0.7672   1.2684   1.6533
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -1.0724    0.1142  -9.394 < 2e-16 ***
## apsq_threshold  0.8611    0.2203   3.909 9.25e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 630.46  on 517  degrees of freedom
## Residual deviance: 615.48  on 516  degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 619.48
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      2.365696

## Power for logistic regression
##
##           p0          p1      beta0      beta1  n alpha      power
##      0.2549505 0.4473684 -1.072381  0.8610722 518  0.05 0.9950865
##
## URL: http://psychstat.org/logistic

#Drug Male Athletes

##
## Call:
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.2309  -0.1411  -0.1411  -0.1411   3.0381
##
```

```
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -4.6052    0.5025  -9.165  <2e-16 ***
## apsq_threshold  0.9943    0.7713   1.289   0.197
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 74.162 on 517 degrees of freedom
## Residual deviance: 72.627 on 516 degrees of freedom
## (1504 observations deleted due to missingness)
## AIC: 76.627
##
## Number of Fisher Scoring iterations: 7

## apsq_threshold
##      2.702703

## Power for logistic regression
##
##           p0          p1    beta0      beta1    n alpha      power
##      0.00990099 0.02631579 -4.60517  0.9942523 518  0.05 0.2705362
##
## URL: http://psychstat.org/logistic

#Food Male Athletes

##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.males)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.122  -1.019  -1.019   1.345   1.345
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.38526    0.07484  -5.148 2.63e-07 ***
## apsq_threshold  2.52533    0.31421   8.037 9.21e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 1182.2 on 854 degrees of freedom
## Residual deviance: 1077.0 on 853 degrees of freedom
## (1167 observations deleted due to missingness)
## AIC: 1081
```

```
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      12.495

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha power
##      0.4048583 0.8947368 -0.3852624 2.525329 855 0.05      1
##
## URL: http://psychstat.org/logistic

#GAD7 Female Athletes

##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.6005  -0.6005  -0.0759  -0.0759   3.4212
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.849     1.001  -5.841 5.18e-09 ***
## apsq_threshold  4.228     1.019   4.148 3.36e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 254.88  on 547  degrees of freedom
## Residual deviance: 192.85  on 546  degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 196.85
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      68.56886

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha power
##      0.002873563 0.165 -5.849325 4.227839 548 0.05 0.9597487
##
## URL: http://psychstat.org/logistic

#PHQ9 Female Athletes
```

```
##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.3949  -0.3949  -0.0759  -0.0759   3.4212
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.849      1.001  -5.841 5.18e-09 ***
## apsq_threshold  3.337      1.037   3.219 0.00129 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 144.61  on 547  degrees of freedom
## Residual deviance: 120.26  on 546  degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 124.26
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      28.13513

## Power for logistic regression
##
##           p0    p1    beta0    beta1    n alpha    power
## 0.002873563 0.075 -5.849325 3.337019 548 0.05 0.8257724
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Q9 Female Athletes

```
##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.30346  -0.30346  -0.00003  -0.00003   2.49042
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -21.57    1567.02  -0.014   0.989
## apsq_threshold  18.51    1567.02   0.012   0.991
##
```

```
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 91.814 on 547 degrees of freedom
## Residual deviance: 73.408 on 546 degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 77.408
##
## Number of Fisher Scoring iterations: 20

## apsq_threshold
## 109454519

## Power for logistic regression
##
## p0 p1 beta0 beta1 n alpha power
## 4.305023e-10 0.045 -21.56607 18.51102 548 0.05 0.05000463
##
## URL: http://psychstat.org/logistic

#ASSQ Female Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
## data = model.df.females)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -0.8699 -0.5189 -0.4019 -0.4019 2.2611
##
## Coefficients:
## Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.4756 0.2004 -12.355 < 2e-16 ***
## apsq_threshold 1.6988 0.2516 6.751 1.47e-11 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 489.50 on 547 degrees of freedom
## Residual deviance: 439.11 on 546 degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 443.11
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
## 5.467153

## Power for logistic regression
##
```

```
##           p0    p1    beta0    beta1    n alpha    power
##    0.07758621 0.315 -2.475604 1.698758 548  0.05 0.9999974
##
## URL: http://psychstat.org/logistic

#Alcohol Female Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.0852  -0.8427  -0.8427   1.2725   1.5542
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -0.8528     0.1171  -7.282 3.29e-13 ***
## apsq_threshold  0.6319     0.1843   3.429 0.000606 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 711.08  on 547  degrees of freedom
## Residual deviance: 699.32  on 546  degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 703.32
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      1.88115

## Power for logistic regression
##
##           p0    p1    beta0    beta1    n alpha    power
##    0.2988506 0.445 -0.8527773 0.6318835 548  0.05 0.9408171
##
## URL: http://psychstat.org/logistic

#Drug Female Athletes

##
## Call:
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
```

```
## -0.1739 -0.1739 -0.0759 -0.0759 3.4212
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -5.849     1.001  -5.841 5.18e-09 ***
## apsq_threshold  1.665     1.158   1.437  0.151
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 47.331 on 547 degrees of freedom
## Residual deviance: 44.855 on 546 degrees of freedom
## (1572 observations deleted due to missingness)
## AIC: 48.855
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##           5.284264

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha      power
##           0.002873563 0.015 -5.849325 1.664733 548 0.05 0.2713913
##
## URL: http://psychstat.org/logistic
```

#Food Female Athletes

```
##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.females)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.4085  -1.0089   0.3364   1.3558   1.3558
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.41018   0.07681  -5.341 9.27e-08 ***
## apsq_threshold  3.25403   0.31952  10.184 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 1256.0 on 906 degrees of freedom
## Residual deviance: 1036.2 on 905 degrees of freedom
## (1213 observations deleted due to missingness)
```

```
## AIC: 1040.2
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
##      25.89458

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha power
##      0.3988685 0.945 -0.4101821 3.254034 907  0.05      1
##
## URL: http://psychstat.org/logistic

#GAD7 Olympic Athletes

##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.4776 -0.0756 -0.0756 -0.0756  3.4228
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -5.8551     0.7081  -8.269 < 2e-16 ***
## apsq_threshold  3.7417     0.7349   5.092 3.55e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 274.42  on 968  degrees of freedom
## Residual deviance: 211.37  on 967  degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 215.37
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      42.17083

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha      power
##      0.002857143 0.1078067 -5.855072 3.741729 969  0.05 0.9911636
##
## URL: http://psychstat.org/logistic
```


#PHQ9 Olympic Athletes

```
##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.3388 -0.3388 -0.0535 -0.0535  3.6197
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -6.550     1.001  -6.545 5.95e-11 ***
## apsq_threshold  3.720     1.035   3.593 0.000327 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 163.05  on 968  degrees of freedom
## Residual deviance: 130.85  on 967  degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 134.85
##
## Number of Fisher Scoring iterations: 9
##
## apsq_threshold
##      41.27953
##
## Power for logistic regression
##
##              p0      p1    beta0    beta1  n alpha    power
##      0.001428571 0.05576208 -6.549651 3.720367 969  0.05 0.8625665
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Q9 Olympic Athletes

```
##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.2890 -0.2890 -0.0535 -0.0535  3.6197
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -6.550     1.001  -6.545 5.95e-11 ***
```

```
## apsq_threshold    3.395      1.047    3.242  0.00119 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 129.24 on 968 degrees of freedom
## Residual deviance: 106.97 on 967 degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 110.97
##
## Number of Fisher Scoring iterations: 9

## apsq_threshold
##      29.80233

## Power for logistic regression
##
##           p0          p1      beta0      beta1  n alpha    power
##      0.001428571 0.04089219 -6.549651 3.394586 969  0.05 0.791658
##
## URL: http://psychstat.org/logistic

#ASSQ Olympic Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.9211  -0.4307  -0.4307  -0.4307   2.2018
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -2.3312     0.1330 -17.524  <2e-16 ***
## apsq_threshold  1.6933     0.1847   9.166  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 851.95 on 968 degrees of freedom
## Residual deviance: 765.79 on 967 degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 769.79
##
## Number of Fisher Scoring iterations: 5
```

```
## apsq_threshold
##      5.4375

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha power
##      0.08857143 0.3457249 -2.331204  1.693319 969  0.05      1
##
## URL: http://psychstat.org/logistic

#Alcohol Olympic Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.1055  -0.8007  -0.8007   1.2510   1.6085
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.97299    0.08472 -11.485 < 2e-16 ***
## apsq_threshold  0.80156    0.14885   5.385 7.24e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 1222.2 on 968 degrees of freedom
## Residual deviance: 1193.4 on 967 degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 1197.4
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      2.229024

## Power for logistic regression
##
##           p0      p1      beta0      beta1      n alpha      power
##      0.2742857 0.4572491 -0.9729861  0.8015638 969  0.05 0.9999527
##
## URL: http://psychstat.org/logistic

#Drug Olympic Athletes

##
## Call:
```

```

## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -0.2124 -0.2124 -0.1197 -0.1197  3.1438
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -4.9345     0.4488 -10.995  <2e-16 ***
## apsq_threshold  1.1541     0.6098  1.893   0.0584 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 120.40  on 968  degrees of freedom
## Residual deviance: 116.88  on 967  degrees of freedom
## (2787 observations deleted due to missingness)
## AIC: 120.88
##
## Number of Fisher Scoring iterations: 7

## apsq_threshold
##      3.171103

## Power for logistic regression
##
##              p0          p1      beta0      beta1      n alpha      power
##      0.007142857 0.02230483 -4.934474  1.154079  969  0.05 0.4595868
##
## URL: http://psychstat.org/logistic

#Food Olympic Athletes

##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.olympics)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -2.2584 -1.0713  0.4032  1.2873  1.2873
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -0.25480     0.05728  -4.448 8.66e-06 ***
## apsq_threshold  2.72371     0.23438 11.621 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 2087.3 on 1507 degrees of freedom
## Residual deviance: 1845.1 on 1506 degrees of freedom
## (2248 observations deleted due to missingness)
## AIC: 1849.1
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
## 15.23669

## Power for logistic regression
##
## p0 p1 beta0 beta1 n alpha power
## 0.4366425 0.9219331 -0.2547998 2.723706 1508 0.05 1
##
## URL: http://psychstat.org/logistic

#GAD7 Paralympic Athletes

##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
## data = model.df.paralympics)
##
## Deviance Residuals:
## Min 1Q Median 3Q Max
## -0.66805 -0.66805 -0.00005 -0.00005 1.79412
##
## Coefficients:
## Estimate Std. Error z value Pr(>|z|)
## (Intercept) -20.57 2458.76 -0.008 0.993
## apsq_threshold 19.18 2458.76 0.008 0.994
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 59.933 on 96 degrees of freedom
## Residual deviance: 45.036 on 95 degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 49.036
##
## Number of Fisher Scoring iterations: 19

## apsq_threshold
## 213633857

## Power for logistic regression
##
## p0 p1 beta0 beta1 n alpha power
## 1.1702226e-09 0.2 -20.56607 19.17977 97 0.05 0.05000239
```

```
##
## URL: http://psychstat.org/logistic

#PHQ9 Paralympic Athletes

##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.paralympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.48535 -0.48535 -0.00005 -0.00005  2.09629
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -20.57    2458.76  -0.008   0.993
## apsq_threshold  18.49    2458.76   0.008   0.994
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 39.390  on 96  degrees of freedom
## Residual deviance: 31.395  on 95  degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 35.395
##
## Number of Fisher Scoring iterations: 19

## apsq_threshold
##      106816929

## Power for logistic regression
##
##              p0          p1      beta0      beta1  n alpha      power
## 1.170226e-09 0.1111111 -20.56607 18.48663 97 0.05 0.05000222
##
## URL: http://psychstat.org/logistic

#PHQ9 Q9 Paralympic Athletes

##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.paralympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.37146 -0.37146 -0.00005 -0.00005  2.32725
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
```

```
## (Intercept)      -20.57    2458.76  -0.008    0.993
## apsq_threshold   17.93    2458.76   0.007    0.994
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 26.763 on 96 degrees of freedom
## Residual deviance: 22.044 on 95 degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 26.044
##
## Number of Fisher Scoring iterations: 19

## apsq_threshold
##      61038245

## Power for logistic regression
##
##              p0          p1      beta0      beta1  n alpha      power
## 1.170226e-09 0.06666667 -20.56607 17.92701 97 0.05 0.05000209
##
## URL: http://psychstat.org/logistic

#ASSQ Paralympic Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
## data = model.df.paralympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.7876  -0.7876  -0.4497  -0.4497   2.1642
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -2.2407     0.4703  -4.764 1.9e-06 ***
## apsq_threshold  1.2291     0.5787   2.124 0.0337 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 90.040 on 96 degrees of freedom
## Residual deviance: 85.113 on 95 degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 89.113
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      3.418182
```

```
## Power for logistic regression
##
##           p0           p1      beta0      beta1  n alpha      power
##    0.09615385 0.2666667 -2.24071  1.229109 97  0.05 0.5555677
##
## URL: http://psychstat.org/logistic

#Alcohol Paralympic Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.paralympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.9741 -0.9741 -0.8250  1.3953  1.5768
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -0.9029     0.3061  -2.950  0.00318 **
## apsq_threshold  0.4039     0.4339   0.931  0.35191
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 123.02  on 96  degrees of freedom
## Residual deviance: 122.15  on 95  degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 126.15
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      1.497619

## Power for logistic regression
##
##           p0           p1      beta0      beta1  n alpha      power
##    0.2884615 0.3777778 -0.9028677  0.4038765 97  0.05 0.1536799
##
## URL: http://psychstat.org/logistic

#Drug Paralympic Athletes

##
## Call:
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.paralympics)
##
```



```

## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.409e-06 -2.409e-06 -2.409e-06 -2.409e-06 -2.409e-06
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -2.657e+01  4.939e+04  -0.001      1
## apsq_threshold -1.746e-14  7.251e+04   0.000      1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 0.0000e+00  on 96  degrees of freedom
## Residual deviance: 5.6275e-10  on 95  degrees of freedom
## (289 observations deleted due to missingness)
## AIC: 4
##
## Number of Fisher Scoring iterations: 25

## apsq_threshold
##           1

## Power for logistic regression
##
##           p0           p1      beta0      beta1  n alpha power
## 2.900701e-12 2.900701e-12 -26.56607 -1.765255e-14 97 0.05 0.05
##
## URL: http://psychstat.org/logistic

#Food Paralympic Athletes

##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.paralympics)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.4954  -0.6609  -0.6609   0.3015   1.8049
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -1.4104     0.1742  -8.097 5.64e-16 ***
## apsq_threshold  4.4784     0.7440   6.020 1.75e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 322.42  on 253  degrees of freedom
## Residual deviance: 223.29  on 252  degrees of freedom
## (132 observations deleted due to missingness)

```

```
## AIC: 227.29
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
##      88.09756

## Power for logistic regression
##
##           p0          p1      beta0      beta1      n alpha power
##      0.1961722 0.9555556 -1.410392 4.478445 254 0.05      1
##
## URL: http://psychstat.org/logistic

#GAD7 Summer Athletes

##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.5042 -0.5042 -0.0927 -0.0927  3.3018
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.4467     0.7086  -7.686 1.51e-14 ***
## apsq_threshold  3.4481     0.7357   4.687 2.78e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 254.68  on 708  degrees of freedom
## Residual deviance: 203.48  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 207.48
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      31.43925

## Power for logistic regression
##
##           p0          p1      beta0      beta1      n alpha power
##      0.004291845 0.1193416 -5.446737 3.448057 709 0.05 0.9861055
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Summer Athletes

```
##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.39233  -0.39233  -0.00003  -0.00003   2.28153
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -21.57    1354.17  -0.016   0.987
## apsq_threshold   19.04    1354.17   0.014   0.989
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 167.78  on 708  degrees of freedom
## Residual deviance: 128.33  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 132.33
##
## Number of Fisher Scoring iterations: 20

## apsq_threshold
##      185829445

## Power for logistic regression
##
##              p0          p1      beta0      beta1      n alpha      power
##      4.305023e-10 0.07407407 -21.56607 19.04034 709  0.05 0.05000634
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Q9 Summer Athletes

```
##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.3445  -0.3445  -0.0655  -0.0655   3.5055
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -6.142     1.001  -6.138 8.37e-10 ***
## apsq_threshold   3.347     1.038   3.225 0.00126 **
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##   Null deviance: 145.35  on 708  degrees of freedom
## Residual deviance: 121.38  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 125.38
##
## Number of Fisher Scoring iterations: 8

## apsq_threshold
##      28.42794

## Power for logistic regression
##
##           p0          p1      beta0      beta1  n alpha      power
##    0.002145923 0.05761317 -6.142037  3.347372 709  0.05 0.8161029
##
## URL: http://psychstat.org/logistic

#ASSQ Summer Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.8937  -0.4663  -0.4663  -0.4663   2.1321
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -2.1643     0.1524  -14.2 < 2e-16 ***
## apsq_threshold  1.4526     0.2046   7.1 1.25e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##   Null deviance: 669.59  on 708  degrees of freedom
## Residual deviance: 617.02  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 621.02
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      4.274029
```

```
## Power for logistic regression
##
##           p0           p1      beta0      beta1      n alpha      power
##      0.1030043 0.3292181 -2.16428  1.452557 709  0.05 0.9999997
##
## URL: http://psychstat.org/logistic

#Alcohol Summer Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -1.003  -0.730  -0.730   1.363   1.705
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -1.1864    0.1094  -10.84 < 2e-16 ***
## apsq_threshold  0.7603    0.1709   4.45 8.6e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 852.76  on 708  degrees of freedom
## Residual deviance: 833.05  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 837.05
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      2.138925

## Power for logistic regression
##
##           p0           p1      beta0      beta1      n alpha      power
##      0.2339056 0.3950617 -1.186388  0.7603035 709  0.05 0.9956171
##
## URL: http://psychstat.org/logistic

#Drug Summer Athletes

##
## Call:
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
```

```
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.1286 -0.1286 -0.1137 -0.1137  3.1767
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -5.0391    0.5791  -8.702  <2e-16 ***
## apsq_threshold  0.2475    0.9162   0.270   0.787
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 59.509  on 708  degrees of freedom
## Residual deviance: 59.437  on 707  degrees of freedom
## (2731 observations deleted due to missingness)
## AIC: 63.437
##
## Number of Fisher Scoring iterations: 7
##
## apsq_threshold
##      1.280774
##
## Power for logistic regression
##
##              p0          p1      beta0      beta1  n alpha      power
##      0.006437769 0.008230453 -5.039115  0.2474649 709  0.05 0.05896549
##
## URL: http://psychstat.org/logistic
```

#Food Summer Athletes

```
##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.summer)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.2349 -0.8878 -0.8878  1.4978  1.4978
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -0.72759    0.06323  -11.51  <2e-16 ***
## apsq_threshold  3.13903    0.24183  12.98  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 1888.5  on 1381  degrees of freedom
```

```
## Residual deviance: 1575.9 on 1380 degrees of freedom
## (2058 observations deleted due to missingness)
## AIC: 1579.9
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
##      23.0814

## Power for logistic regression
##
##           p0          p1        beta0      beta1      n alpha power
##      0.3257243 0.9176955 -0.7275877 3.139027 1382 0.05      1
##
## URL: http://psychstat.org/logistic
```

#GAD7 Winter Athletes

```
##
## Call:
## glm(formula = anxiety_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.52066 -0.00003 -0.00003 -0.00003  2.03246
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -21.57    1728.55  -0.012   0.990
## apsq_threshold   19.64    1728.55   0.011   0.991
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 84.020 on 356 degrees of freedom
## Residual deviance: 53.986 on 355 degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 57.986
##
## Number of Fisher Scoring iterations: 20

## apsq_threshold
##      337190535

## Power for logistic regression
##
##           p0          p1        beta0      beta1      n alpha      power
##      4.305023e-10 0.1267606 -21.56607 19.63616 357 0.05 0.05000339
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Winter Athletes

```
##
## Call:
## glm(formula = depression_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -0.2391  -0.0837  -0.0837  -0.0837   3.3633
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -5.652      1.002  -5.643 1.67e-08 ***
## apsq_threshold  2.112      1.232   1.714  0.0866 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 34.649  on 356  degrees of freedom
## Residual deviance: 31.530  on 355  degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 35.53
##
## Number of Fisher Scoring iterations: 8
##
## apsq_threshold
##           8.26087
##
## Power for logistic regression
##
##           p0          p1      beta0  beta1  n alpha  power
## 0.003496503 0.02816901 -5.652489 2.11153 357 0.05 0.3479
##
## URL: http://psychstat.org/logistic
```

#PHQ9 Q9 Winter Athletes

```
## Warning: glm.fit: algorithm did not converge
##
## Call:
## glm(formula = depression_9_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -2.409e-06 -2.409e-06 -2.409e-06 -2.409e-06 -2.409e-06
##
## Coefficients:
```



```
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.657e+01 2.106e+04 -0.001 0.999
## apsq_threshold -1.190e-14 4.722e+04 0.000 1.000
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 0.0000e+00 on 356 degrees of freedom
## Residual deviance: 2.0712e-09 on 355 degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 4
##
## Number of Fisher Scoring iterations: 25

## apsq_threshold
##           1

## Power for logistic regression
##
##           p0           p1      beta0          beta1  n alpha power
## 2.900701e-12 2.900701e-12 -26.56607 -1.076916e-14 357 0.05 0.05
##
## URL: http://psychstat.org/logistic

#ASSQ Winter Athletes

##
## Call:
## glm(formula = sleep_threshold ~ apsq_threshold, family = binomial,
## data = model.df.winter)
##
## Deviance Residuals:
##   Min       1Q   Median       3Q      Max
## -0.9317 -0.3708 -0.3708 -0.3708  2.3288
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -2.6428    0.2374 -11.131 < 2e-16 ***
## apsq_threshold  2.0330    0.3437  5.916 3.31e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 266.57 on 356 degrees of freedom
## Residual deviance: 231.87 on 355 degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 235.87
##
## Number of Fisher Scoring iterations: 5
```

```
## apsq_threshold
##      7.6373

## Power for logistic regression
##
##           p0      p1   beta0   beta1   n alpha   power
##    0.06643357 0.3521127 -2.64281 2.033044 357  0.05 0.9999731
##
## URL: http://psychstat.org/logistic

#Alcohol Winter Athletes

##
## Call:
## glm(formula = alcohol_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.391  -0.916  -0.916   1.464   1.464
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -0.6515    0.1246  -5.229 1.71e-07 ***
## apsq_threshold  1.1398    0.2744   4.154 3.27e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 479.87  on 356  degrees of freedom
## Residual deviance: 461.99  on 355  degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 465.99
##
## Number of Fisher Scoring iterations: 4

## apsq_threshold
##      3.126228

## Power for logistic regression
##
##           p0      p1   beta0   beta1   n alpha   power
##    0.3426573 0.6197183 -0.6514745 1.139827 357  0.05 0.9993319
##
## URL: http://psychstat.org/logistic

#Drug Winter Athletes

##
## Call:
```

```
## glm(formula = drug_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -0.3406  -0.1185  -0.1185  -0.1185   3.1505
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -4.9558     0.7095  -6.985 2.85e-12 ***
## apsq_threshold  2.1374     0.8765   2.438  0.0147 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 60.930  on 356  degrees of freedom
## Residual deviance: 54.619  on 355  degrees of freedom
## (345 observations deleted due to missingness)
## AIC: 58.619
##
## Number of Fisher Scoring iterations: 7
##
## apsq_threshold
##      8.477612
##
## Power for logistic regression
##
##              p0          p1      beta0      beta1      n alpha      power
##      0.006993007 0.05633803 -4.955827  2.137429  357  0.05 0.6095234
##
## URL: http://psychstat.org/logistic
##
##Food Winter Athletes
##
## Call:
## glm(formula = food_threshold ~ apsq_threshold, family = binomial,
##      data = model.df.winter)
##
## Deviance Residuals:
##      Min        1Q    Median        3Q        Max
## -2.5156  -1.5155   0.8735   0.8735   0.8735
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   0.7669     0.1222   6.273 3.53e-10 ***
## apsq_threshold  2.3540     0.6024   3.908 9.31e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 440.06 on 379 degrees of freedom
## Residual deviance: 410.92 on 378 degrees of freedom
## (322 observations deleted due to missingness)
## AIC: 414.92
##
## Number of Fisher Scoring iterations: 5

## apsq_threshold
## 10.52765

## Power for logistic regression
##
## p0 p1 beta0 beta1 n alpha power
## 0.6828479 0.9577465 0.7668907 2.354005 380 0.05 0.9999723
##
## URL: http://psychstat.org/logistic

#Power Analysis for regression models #SMHAT_total by sex

##
## Call:
## lm(formula = SMHAT_total ~ Gender, data = model.df)
##
## Residuals:
## Min 1Q Median 3Q Max
## -3.590 -2.422 -1.590 1.578 21.578
##
## Coefficients:
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 13.5899 0.1415 96.050 < 2e-16 ***
## GenderMale -1.1676 0.2031 -5.749 1.06e-08 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.261 on 1760 degrees of freedom
## (2380 observations deleted due to missingness)
## Multiple R-squared: 0.01843, Adjusted R-squared: 0.01787
## F-statistic: 33.05 on 1 and 1760 DF, p-value: 1.058e-08

## Power for multiple regression
##
## n p1 p2 f2 alpha power
## 1762 1 0 0.01877711 0.05 0.9999243
##
## URL: http://psychstat.org/regression

#GAD7 by sex
```

```
##
## Call:
## lm(formula = GAD_total ~ Gender, data = model.df)
##
## Residuals:
##   Min     1Q  Median     3Q      Max
## -3.628 -2.168 -2.168  1.831 18.831
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.6276     0.1636  22.168 < 2e-16 ***
## GenderMale   -1.4591     0.2381  -6.129 1.2e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.085 on 1179 degrees of freedom
## (2961 observations deleted due to missingness)
## Multiple R-squared:  0.03088,    Adjusted R-squared:  0.03006
## F-statistic: 37.57 on 1 and 1179 DF,  p-value: 1.204e-09

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##  1181  1  0 0.03186197 0.05 0.9999847
##
## URL: http://psychstat.org/regression
```

#PHQ9 by sex

```
##
## Call:
## lm(formula = PHQ_total ~ Gender, data = model.df)
##
## Residuals:
##   Min     1Q  Median     3Q      Max
## -2.6342 -1.6342 -1.6188  0.3812 20.3812
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.6342     0.1414  18.631 < 2e-16 ***
## GenderMale   -1.0154     0.2038  -4.983 7.25e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.42 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
## Multiple R-squared:  0.02157,    Adjusted R-squared:  0.02071
## F-statistic: 24.83 on 1 and 1126 DF,  p-value: 7.249e-07

## Power for multiple regression
##
```

```
##          n p1 p2          f2 alpha      power
##        1128 1  0 0.0220501  0.05 0.9987486
##
## URL: http://psychstat.org/regression

#PHQ9 Q9 by sex

##
## Call:
## lm(formula = PHQ_Full_7_numeric ~ Gender, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.03590 -0.03590 -0.03590 -0.02026  1.96410
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.035897   0.007497   4.788 1.91e-06 ***
## GenderMale  -0.015640   0.010806  -1.447   0.148
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1813 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
## Multiple R-squared:  0.001857, Adjusted R-squared:  0.0009706
## F-statistic: 2.095 on 1 and 1126 DF, p-value: 0.1481

## Power for multiple regression
##
##          n p1 p2          f2 alpha      power
##        1128 1  0 0.001860472  0.05 0.3044642
##
## URL: http://psychstat.org/regression

#ASSQ by sex

##
## Call:
## lm(formula = ASSQ_total ~ Gender, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -5.0529 -2.0529 -0.7857  1.2143 10.9471
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   5.0529     0.1190  42.472 <2e-16 ***
## GenderMale   -0.2672     0.1707  -1.566   0.118
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## Residual standard error: 2.785 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared: 0.002299, Adjusted R-squared: 0.001361
## F-statistic: 2.451 on 1 and 1064 DF, p-value: 0.1177

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1066 1 0 0.002303821 0.05 0.3469072
##
## URL: http://psychstat.org/regression
```

#Alcohol by sex

```
##
## Call:
## lm(formula = Alcohol_total ~ Gender, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.6178 -1.1569 -0.1569  0.8431  8.3822
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.15693    0.07195  29.976 < 2e-16 ***
## GenderMale   0.46083    0.10322   4.464 8.88e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.684 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared: 0.01839, Adjusted R-squared: 0.01747
## F-statistic: 19.93 on 1 and 1064 DF, p-value: 8.884e-06

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1066 1 0 0.01873227 0.05 0.9938709
##
## URL: http://psychstat.org/regression
```

#Drug by sex

```
##
## Call:
## lm(formula = Drug_total ~ Gender, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0676 -0.0676 -0.0365 -0.0365  3.9635
##
```

```
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.03650    0.01434   2.545  0.0111 *
## GenderMale   0.03107    0.02057   1.510  0.1312
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3357 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  0.002139, Adjusted R-squared:  0.001202
## F-statistic: 2.281 on 1 and 1064 DF, p-value: 0.1312

## Power for multiple regression
##
##           n p1 p2           f2 alpha    power
##          1066 1  0 0.002144034 0.05 0.3267852
##
## URL: http://psychstat.org/regression
```

#Food by sex

```
##
## Call:
## lm(formula = Food_total ~ Gender, data = model.df)
##
## Residuals:
##    Min     1Q   Median     3Q    Max
## -2.851 -2.851 -2.157 -2.157  28.149
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.8514     0.1155  24.695 < 2e-16 ***
## GenderMale   -0.6946     0.1653  -4.203 2.69e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5.316 on 4140 degrees of freedom
## Multiple R-squared:  0.004249, Adjusted R-squared:  0.004009
## F-statistic: 17.67 on 1 and 4140 DF, p-value: 2.686e-05

## Power for multiple regression
##
##           n p1 p2           f2 alpha    power
##          4142 1  0 0.00426759 0.05 0.987564
##
## URL: http://psychstat.org/regression
```

#SMHAT_total by games

```
##
## Call:
```



```
## lm(formula = SMHAT_total ~ games, data = model.df)
##
## Residuals:
##   Min     1Q  Median     3Q      Max
## -3.449 -2.952 -1.952  1.924 21.551
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    12.9516     0.1107 117.037 <2e-16 ***
## gamesparalympics  0.4972     0.2915   1.706  0.0882 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.297 on 1760 degrees of freedom
## (2380 observations deleted due to missingness)
## Multiple R-squared:  0.001651, Adjusted R-squared:  0.001084
## F-statistic:  2.91 on 1 and 1760 DF, p-value: 0.08819

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##  1762  1  0 0.00165358 0.05 0.3998841
##
## URL: http://psychstat.org/regression
```

#GAD7 by games

```
##
## Call:
## lm(formula = GAD_total ~ games, data = model.df)
##
## Residuals:
##   Min     1Q  Median     3Q      Max
## -3.57 -2.88 -1.88  2.12 18.12
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)     2.8797     0.1261  22.844 <2e-16 ***
## gamesparalympics  0.6903     0.4332   1.593  0.111
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.145 on 1179 degrees of freedom
## (2961 observations deleted due to missingness)
## Multiple R-squared:  0.002149, Adjusted R-squared:  0.001302
## F-statistic:  2.539 on 1 and 1179 DF, p-value: 0.1113

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##  1181  1  0 0.002153343 0.05 0.3571662
```

```
##
## URL: http://psychstat.org/regression

#PHQ9 by games

##
## Call:
## lm(formula = PHQ_total ~ games, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.6465 -2.0972 -1.6465  0.9028 20.9028
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)      2.0972     0.1077  19.479 <2e-16 ***
## gamesparalympics 0.5493     0.3634   1.511  0.131
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.454 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
## Multiple R-squared:  0.002025, Adjusted R-squared:  0.001138
## F-statistic: 2.284 on 1 and 1126 DF, p-value: 0.131

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##  1128 1  0 0.002028749 0.05 0.3271555
##
## URL: http://psychstat.org/regression

#PHQ9 Q9 by games

##
## Call:
## lm(formula = PHQ_Full_7_numeric ~ games, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.03030 -0.02818 -0.02818 -0.02818  1.97182
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.028183   0.005658   4.981 7.31e-07 ***
## gamesparalympics 0.002120   0.019098   0.111  0.912
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1815 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
```

```
## Multiple R-squared: 1.095e-05, Adjusted R-squared: -0.0008771
## F-statistic: 0.01233 on 1 and 1126 DF, p-value: 0.9116
```

```
## Power for multiple regression
```

```
##
##      n p1 p2      f2 alpha  power
##    1128 1 0 1.094637e-05 0.05 0.05141321
##
```

```
## URL: http://psychstat.org/regression
```

```
#ASSQ by games
```

```
##
```

```
## Call:
```

```
## lm(formula = ASSQ_total ~ games, data = model.df)
```

```
##
```

```
## Residuals:
```

```
##      Min      1Q  Median      3Q      Max
## -5.443 -1.871 -0.871  1.129 11.129
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    4.87100    0.08941  54.477  <2e-16 ***
## gamesparalympics 0.57230    0.29641   1.931  0.0538 .
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
```

```
## Residual standard error: 2.783 on 1064 degrees of freedom
```

```
## (3076 observations deleted due to missingness)
```

```
## Multiple R-squared: 0.003491, Adjusted R-squared: 0.002555
```

```
## F-statistic: 3.728 on 1 and 1064 DF, p-value: 0.05378
```

```
## Power for multiple regression
```

```
##
##      n p1 p2      f2 alpha  power
##    1066 1 0 0.003503541 0.05 0.4884217
##
```

```
## URL: http://psychstat.org/regression
```

```
#Alcohol by games
```

```
##
```

```
## Call:
```

```
## lm(formula = Alcohol_total ~ games, data = model.df)
```

```
##
```

```
## Residuals:
```

```
##      Min      1Q  Median      3Q      Max
## -2.3488 -1.3488 -0.3488  0.6512  8.6512
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)      2.34881    0.05452  43.083   <2e-16 ***
## gamesparalympics 0.35222    0.18073   1.949   0.0516 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.697 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  0.003557, Adjusted R-squared:  0.00262
## F-statistic: 3.798 on 1 and 1064 DF, p-value: 0.05158

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1066 1 0 0.003569529 0.05 0.4956366
##
## URL: http://psychstat.org/regression

#Drug by games

##
## Call:
## lm(formula = Drug_total ~ games, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.0526 -0.0526 -0.0526 -0.0526  3.9474
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.05263    0.01080   4.875 1.25e-06 ***
## gamesparalympics -0.01139    0.03579  -0.318   0.75
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.336 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  9.527e-05, Adjusted R-squared:  -0.0008445
## F-statistic: 0.1014 on 1 and 1064 DF, p-value: 0.7502

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1066 1 0 9.527949e-05 0.05 0.06169336
##
## URL: http://psychstat.org/regression

#Food by games

##
## Call:
## lm(formula = Food_total ~ games, data = model.df)
```

```
##
## Residuals:
##   Min     1Q   Median     3Q      Max
## -2.637 -2.499 -2.499 -2.499 28.500
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.49947    0.08693   28.753 <2e-16 ***
## gamesparalympics 0.13784    0.28476    0.484  0.628
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5.328 on 4140 degrees of freedom
## Multiple R-squared:  5.659e-05, Adjusted R-squared:  -0.0001849
## F-statistic: 0.2343 on 1 and 4140 DF,  p-value: 0.6284

## Power for multiple regression
##
##      n p1 p2          f2 alpha    power
##    4142 1 0 5.659442e-05 0.05 0.07724604
##
## URL: http://psychstat.org/regression

#SMHAT_total by season

##
## Call:
## lm(formula = SMHAT_total ~ season, data = model.df)
##
## Residuals:
##   Min     1Q   Median     3Q      Max
## -3.205 -2.973 -1.973  1.795 22.027
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    12.9732    0.1157 112.163 <2e-16 ***
## seasonwinter    0.2320    0.2491  0.932  0.352
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.3 on 1760 degrees of freedom
## (2380 observations deleted due to missingness)
## Multiple R-squared:  0.0004929, Adjusted R-squared:  -7.5e-05
## F-statistic: 0.8679 on 1 and 1760 DF,  p-value: 0.3517

## Power for multiple regression
##
##      n p1 p2          f2 alpha    power
##    1762 1 0 0.0004931497 0.05 0.1538187
##
## URL: http://psychstat.org/regression
```

#GAD7 by season

```
##
## Call:
## lm(formula = GAD_total ~ season, data = model.df)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -3.359 -3.359 -2.005  1.641 17.641
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.3587     0.1438  23.364 < 2e-16 ***
## seasonwinter -1.3533     0.2579  -5.248 1.83e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.101 on 1179 degrees of freedom
## (2961 observations deleted due to missingness)
## Multiple R-squared:  0.02282, Adjusted R-squared:  0.022
## F-statistic: 27.54 on 1 and 1179 DF, p-value: 1.825e-07

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##  1181  1  0 0.02335703 0.05 0.9994952
##
## URL: http://psychstat.org/regression
```

#PHQ9 by season

```
##
## Call:
## lm(formula = PHQ_total ~ season, data = model.df)
##
## Residuals:
##   Min       1Q   Median       3Q      Max
## -2.5392 -2.5392 -1.3122  0.6878 20.4608
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   2.5392     0.1232  20.613 < 2e-16 ***
## seasonwinter -1.2270     0.2174  -5.643 2.12e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.409 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
## Multiple R-squared:  0.0275, Adjusted R-squared:  0.02664
## F-statistic: 31.84 on 1 and 1126 DF, p-value: 2.116e-08
```

```
## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1128 1 0 0.02827804 0.05 0.9998848
##
## URL: http://psychstat.org/regression

#PHQ9 Q9 by season

##
## Call:
## lm(formula = PHQ_Full_7_numeric ~ season, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.04178 -0.04178 -0.04178  0.00000  1.95822
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.04177    0.00652   6.408 2.17e-10 ***
## seasonwinter -0.04177    0.01151  -3.630 0.000296 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1804 on 1126 degrees of freedom
## (3014 observations deleted due to missingness)
## Multiple R-squared:  0.01157, Adjusted R-squared:  0.01069
## F-statistic: 13.18 on 1 and 1126 DF, p-value: 0.0002963

## Power for multiple regression
##
##      n p1 p2      f2 alpha  power
##    1128 1 0 0.01170147 0.05 0.9525417
##
## URL: http://psychstat.org/regression

#ASSQ by season

##
## Call:
## lm(formula = ASSQ_total ~ season, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -5.0818 -2.0818 -0.6078  1.3922 10.9182
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  5.0818    0.1044  48.688 < 2e-16 ***
## seasonwinter -0.4740    0.1804  -2.628 0.00872 **
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.779 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  0.006448, Adjusted R-squared:  0.005515
## F-statistic: 6.906 on 1 and 1064 DF, p-value: 0.008716

## Power for multiple regression
##
##      n p1 p2      f2 alpha   power
## 1066  1  0 0.006490227 0.05 0.7479294
##
## URL: http://psychstat.org/regression
```

#Alcohol by season

```
##
## Call:
## lm(formula = Alcohol_total ~ season, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.8319 -1.1537 -0.1537  0.8463  8.8463
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.15374    0.06271  34.347 < 2e-16 ***
## seasonwinter  0.67820    0.10835   6.259 5.61e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.67 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  0.03551, Adjusted R-squared:  0.03461
## F-statistic: 39.18 on 1 and 1064 DF, p-value: 5.608e-10

## Power for multiple regression
##
##      n p1 p2      f2 alpha   power
## 1066  1  0 0.03681902 0.05 0.9999914
##
## URL: http://psychstat.org/regression
```

#Drug by season

```
##
## Call:
## lm(formula = Drug_total ~ season, data = model.df)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
```



```
## -0.0644 -0.0644 -0.0451 -0.0451 3.9549
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.04513    0.01262   3.577 0.000363 ***
## seasonwinter 0.01929    0.02180   0.885 0.376407
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3359 on 1064 degrees of freedom
## (3076 observations deleted due to missingness)
## Multiple R-squared:  0.0007354, Adjusted R-squared: -0.0002037
## F-statistic: 0.7831 on 1 and 1064 DF, p-value: 0.3764

## Power for multiple regression
##
##           n p1 p2           f2 alpha  power
##          1066 1 0 0.0007359581 0.05 0.1434029
##
## URL: http://psychstat.org/regression

#Food by season

##
## Call:
## lm(formula = Food_total ~ season, data = model.df)
##
## Residuals:
##   Min     1Q  Median     3Q    Max
## -4.370 -2.133 -2.133 -2.133 28.867
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.1331    0.0897  23.78 <2e-16 ***
## seasonwinter  2.2372    0.2179  10.27 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 5.261 on 4140 degrees of freedom
## Multiple R-squared:  0.02483, Adjusted R-squared:  0.0246
## F-statistic: 105.4 on 1 and 4140 DF, p-value: < 2.2e-16

## Power for multiple regression
##
##           n p1 p2           f2 alpha power
##          4142 1 0 0.02546448 0.05 1
##
## URL: http://psychstat.org/regression
```