Exam

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library(pacman)  
p\_load(tidyverse, haven, broom, knitr)

workds <- read\_sav("AFPJ SPSS.sav") %>% mutate\_if(is.labelled, ~(as\_factor(.)))

fit1 <- glm(GROUP ~ GENDER, family = "binomial", workds)  
summary(fit1)

##   
## Call:  
## glm(formula = GROUP ~ GENDER, family = "binomial", data = workds)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -1.19011 -1.19011 0.00167 1.16476 1.19348   
##   
## Coefficients:  
## Estimate Std. Error z value Pr(>|z|)  
## (Intercept) -0.03774 0.19429 -0.194 0.846  
## GENDERBOY 0.06759 0.26001 0.260 0.795  
##   
## (Dispersion parameter for binomial family taken to be 1)  
##   
## Null deviance: 332.71 on 239 degrees of freedom  
## Residual deviance: 332.64 on 238 degrees of freedom  
## AIC: 336.64  
##   
## Number of Fisher Scoring iterations: 3

tidy(fit1, conf.int = T)

## # A tibble: 2 x 7  
## term estimate std.error statistic p.value conf.low conf.high  
## <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) -0.0377 0.194 -0.194 0.846 -0.420 0.344  
## 2 GENDERBOY 0.0676 0.260 0.260 0.795 -0.442 0.578

tidy(fit1, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)

## # A tibble: 2 x 6  
## variable coef OR llci ulci p.value  
## <chr> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) -0.0377 0.963 0.657 1.41 0.846  
## 2 GENDERBOY 0.0676 1.07 0.643 1.78 0.795

fit2 <- glm(GROUP ~ AGE, family = "binomial", workds)  
  
tidy(fit2, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)

## # A tibble: 2 x 6  
## variable coef OR llci ulci p.value  
## <chr> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) 1.26 3.54 1.59 8.09 0.00226  
## 2 AGE -0.0369 0.964 0.942 0.985 0.00134

fit3 <- glm(GROUP ~ BW2, family = "binomial", workds)  
  
tidy(fit3, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)

## # A tibble: 2 x 6  
## variable coef OR llci ulci p.value  
## <chr> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 (Intercept) 0.323 1.38 1.03 1.86 0.0319   
## 2 BW2SGA -1.40 0.247 0.125 0.466 0.0000292

gender\_fit <- tidy(fit1, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)  
  
age\_fit <- tidy(fit2, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)  
  
bw\_fit <- tidy(fit3, conf.int = T) %>%   
 mutate(OR = exp(estimate),  
 llci = exp(conf.low),  
 ulci = exp(conf.high)) %>%   
 select(variable = term, coef = estimate, OR, llci, ulci, p.value)  
  
bind\_rows(gender\_fit, age\_fit, bw\_fit) %>%   
 filter(variable != "(Intercept)") %>%   
 kable(digits = 3)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| variable | coef | OR | llci | ulci | p.value |
| GENDERBOY | 0.068 | 1.070 | 0.643 | 1.783 | 0.795 |
| AGE | -0.037 | 0.964 | 0.942 | 0.985 | 0.001 |
| BW2SGA | -1.399 | 0.247 | 0.125 | 0.466 | 0.000 |