Joe Brew – SAS and R code

PHC 6053 – Assignment 8

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| Question | SAS | R |
| Prep | \*READ IN THE DATA FROM ASSIGNMENT 1;  LIBNAME ass8 'C:\Users\BrewJR\Desktop\ass8';  **DATA** ass8.mydata;  SET ass8.fghm122;  RUN;  \*ASSIGN THE DATA TO &DAT;  %let dat=ass8.mydata;  RUN;  /\* TAKE A LOOK AT THE DATA \*/  **proc** **print** data=&dat (obs=**7**);  **run**;  \*OPTIONAL: OUTPUT DIRECTLY AS A PDF FILE/;  ods pdf file = "C:\Users\BrewJR\Desktop\ass8\ass8.pdf" notoc; | setwd("C:/Users/BrewJR/Desktop/ass8")  library(sas7bdat)  library(foreign)  dat <- read.ssd(  "C:/Users/BrewJR/Desktop/ass8",  "fghm122",  sascmd="C:/Program Files/SASHome93/SASFoundation/9.3/sas.exe")  ) |
| 1 | /\* 1(a) CREATE A BMIGROUP VARIABLE\*/  **data** &dat;  set &dat;  BMIGROUP=**.**;  if BMI<**18.5** then BMIGROUP=**1**;  if BMI >= **18.5** & BMI < **25** then BMIGROUP = **2**;  if BMI >= **25** & BMI < **30** then BMIGROUP = **3**;  if BMI >= **30** then BMIGROUP = **4**;  RUN;  /\* 1(b) CREATE HBP \*/  **data** &dat;  set &dat;  HBP=**.**;  if SYSBP >=**0** & SYSBP < **140** then HBP = **0**;  if SYSBP >= **140** then HBP = **1**;  RUN;  /\* 1(c) Remove all the individuals in the underweight BMI group AND all the individuals with a BMI which is 40 or larger\*/  **data** dat2;  set &dat;  if BMIGROUP = **1** then delete;  if BMI > **40** then delete;  run; | # 1(a) CREATE A BMIGROUP VARIABLE\*/  dat$BMIGROUP <- ifelse(dat$BMI<18.5,  1,  ifelse(dat$BMI >= 18.5 & dat$BMI < 25,  2,  ifelse(dat$BMI >= 25 & dat$BMI < 30,  3,  ifelse(dat$BMI >= 30,  4,  NA))))  # 1(b) CREATE HBP \*/  dat$HBP <- ifelse(dat$SYSBP >=0 & dat$SYSBP < 140,  0,  ifelse(dat$SYSBP >= 140,  1,  NA))  # 1(c) Remove all the individuals in the underweight BMI group AND  #all the individuals with a BMI which is 40 or larger\*/  dat2 <-dat[which(dat$BMIGROUP != 1 &  dat$BMI <=40),] |
| 2 | /\* AGE \*/  **proc** **logistic** data = dat2;  model HBP(event="1") = AGE;  **run**;  /\* BMI \*/  **proc** **logistic** data = dat2;  model HBP(event="1") = BMI;  **run**;  /\* BMIGROUP \*/  **proc** **logistic** data = dat2;  class BMIGROUP (ref="2") / param=ref;  model HBP(event="1") = BMIGROUP;  **run**;  /\* SEX \*/  **proc** **logistic** data = dat2;  model HBP(event="1") = SEX;  **run**;  /\* BPMEDS \*/  **proc** **logistic** data = dat2;  model HBP(event="1") = BPMEDS;  **run**;  /\* PREVSTRK \*/  **proc** **logistic** data = dat2;  model HBP(event="1") = PREVSTRK;  **run**; | # AGE \*/  modelAGE <- glm(dat2$HBP ~ dat2$AGE, family="binomial")  exp(cbind(OR = coef(modelAGE), confint(modelAGE)))  # BMI \*/  modelBMI <- glm(dat2$HBP ~ dat2$BMI, family="binomial")  exp(cbind(OR = coef(modelBMI), confint(modelBMI)))  # BMIGROUP \*/  dat2$BMIGROUP <- factor(dat2$BMIGROUP, levels=c(2,3,4))  modelBMIGROUP <- glm(dat2$HBP ~ dat2$BMIGROUP, family="binomial")  exp(cbind(OR = coef(modelBMIGROUP), confint(modelBMIGROUP)))  # SEX \*/  modelSEX <- glm(dat2$HBP ~ dat2$SEX, family="binomial")  exp(cbind(OR = coef(modelSEX), confint(modelSEX)))  # BPMEDS \*/  modelBPMEDS <- glm(dat2$HBP ~ dat2$BPMEDS, family="binomial")  exp(cbind(OR = coef(modelBPMEDS), confint(modelBPMEDS)))  # PREVSTRK \*/  modelPREVSTRK <- glm(dat2$HBP ~ dat2$PREVSTRK, family="binomial")  exp(cbind(OR = coef(modelPREVSTRK), confint(modelPREVSTRK))) |
| 3 | /\* FIRST, CREATE AN INTERACTION TERM BETWEEN BMI AND BPMEDS \*/  **data** dat2;  set dat2;  intBMI\_BPMEDS = BMI \* BPMEDS;  run;  /\*NOW RUN THE MODEL \*/  **proc** **logistic** data = dat2;  class BPMEDS(ref="0") / param=ref;  model HBP(event="1") = BMI BPMEDS intBMI\_BPMEDS;  **run**; | dat2$intBMI\_BPMEDS <- dat2$BMI\*dat2$BPMEDS  #NOW RUN THE MODEL \*/  model3 <- glm(dat2$HBP ~  dat2$BMI +  dat2$BPMEDS +  dat2$intBMI\_BPMEDS, family="binomial")  exp(cbind(OR = coef(model3), confint(model3))) |
| 4 | **proc** **logistic** data = dat2;  class BPMEDS(ref="0") / param=ref;  class SEX(ref="1") / param=ref;  class PREVSTRK(ref="0") / param=ref;  model HBP(event="1") = AGE SEX PREVSTRK BMI BPMEDS intBMI\_BPMEDS;  **run**;  ods pdf close; | model4 <- glm(dat2$HBP ~  dat2$AGE +  dat2$SEX +  dat2$PREVSTRK +  dat2$BMI +  dat2$BPMEDS +  dat2$intBMI\_BPMEDS, family="binomial")  exp(cbind(OR = coef(model4), confint(model4))) |
| 5 |  | #Subset dat2 into bpmeds=yes and bpmeds=no  dat2y <- dat2[which(dat2$BPMEDS == 1),]  dat2n <- dat2[which(dat2$BPMEDS == 0),]  #GET UNADJSUTED FOR BOTH  #BPMEDS=Yes  modelBMI\_BPMEDSY <- glm(dat2y$HBP ~ dat2y$BMI, family="binomial")  exp(cbind(OR = coef(modelBMI\_BPMEDSY), confint(modelBMI\_BPMEDSY)))  #BPMEDS-No  modelBMI\_BPMEDSN <- glm(dat2n$HBP ~ dat2n$BMI, family="binomial")  exp(cbind(OR = coef(modelBMI\_BPMEDSN), confint(modelBMI\_BPMEDSN)))  #GET ADJUSTED FOR BOTH  #BPMEDS=YES  modelBMI\_BPMEDSYadj <- glm(dat2y$HBP ~  dat2y$AGE +  dat2y$SEX +  dat2y$PREVSTRK +  dat2y$BMI,  family="binomial")  exp(cbind(OR = coef(modelBMI\_BPMEDSYadj), confint(modelBMI\_BPMEDSYadj)))  #BPMEDS=NO  modelBMI\_BPMEDSNadj <- glm(dat2n$HBP ~  dat2n$AGE +  dat2n$SEX +  dat2n$PREVSTRK +  dat2n$BMI,  family="binomial")  exp(cbind(OR = coef(modelBMI\_BPMEDSNadj), confint(modelBMI\_BPMEDSNadj))) |