SUDAAN Analysis Example Replication C7

```
* Sudaan Analysis Examples Replication for ASDA 2nd Edition
* Berglund April 2017
* Chapter 7 ;

libname d "P:\ASDA 2\Data sets\nhanes 2011_2012\" ;
ods listing ;
ods graphics off ;
options nodate nonumber ls=125 ps=68 ;
data c7_nhanes ;
  set d.nhanes1112_sub_8aug2016 ;
  bpxdi1_1=bpxdi1 ;
  if bpxdi1=0 then bpxdi1_1=. ;
  agec=age-46.36 ;
  agecsq=agec*agec ;
run ;
proc sort ;
 by sdmvstra sdmvpsu ;
run ;

title " Section 7.5: Application of Linear Regression, Bivariate relationships " ;
proc regress data=c7_nhanes filetype=sas ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
class ridreth1 / nofreq;
reflevel ridreth1=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 ;
setenv decwidth=3 ;
print / betas=all tests=all ;
run ;
proc regress data=c7_nhanes filetype=sas ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
class marcat / nofreq;
reflevel marcat=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = marcat ;
setenv decwidth=3 ;
print / betas=all tests=all ;
run ;
proc regress data=c7_nhanes filetype=sas ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
class riagendr / nofreq;
reflevel riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = riagendr ;
setenv decwidth=3 ;
print / betas=all tests=all ;
run ;
proc regress data=c7_nhanes filetype=sas ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
subpopn age18p=1 ;
model bpxdi1_1 = agec ;
setenv decwidth=3 ;
print / betas=all tests=all ;
run ;

title "Naive analysis, Table 7.2" ;
proc regress data=c7_nhanes design=srs ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;

title "Analysis Example 7.5: Weighted and Without Design Correction: NHANES, Table 7.3" ;
proc regress data=c7_nhanes design=wr ;
nest _one_ ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;
```

```
title "Correct analysis with weights and complex sample features, Table 7.4" ;
proc regress data=c7_nhanes design=wr ;
nest sdmvstra sdmvpsu ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;
title ;

data _null_ ;
 file print ;
 put "Output Diagnostic Graphics Not Available in Sudaan, Can Be Done in SAS or Other Software That Offers Graphical Ability" ;
run ;

title "Analysis with weights and complex sample features plus Age Squared" ;
proc regress data=c7_nhanes design=wr deft1 ;
nest sdmvstra sdmvpsu ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec agecsq ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;

title "Interaction Tests for Preliminary Model: Test Race/Ethnicity X Age" ;
proc regress data=c7_nhanes design=wr deft1 ;
nest sdmvstra sdmvpsu ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec agecsq ridreth1*agec ridreth1*agecsq ;
effects ridreth1*agec ridreth1*agecsq / name="Race and Age and Age Squared Interactions" ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;

title "Interaction Tests for Preliminary Model: Test Gender X Age" ;
proc regress data=c7_nhanes design=wr deft1 ;
nest sdmvstra sdmvpsu ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec agecsq riagendr*agec riagendr*agecsq ;
effects riagendr*agec riagendr*agecsq / name="Gender and Age and Age Squared Interactions" ;
setenv decwidth=3 ;
print / betas=all tests=all style=nchs ;
run ;

title "Final Model with Interactions Included, Numbers for Table 7.6 plus Marginal Predicted Values " ;
* NOTE: Not currectly clear if Sudaan can do predicted marginals as in Stata, will be updated if this can be done ;
proc regress data=c7_nhanes design=wr deft1 ;
nest sdmvstra sdmvpsu ; weight wtmec2yr ;
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1_1 = ridreth1 riagendr agec agecsq ridreth1*agec ridreth1*agecsq riagendr*agec riagendr*agecsq ;
setenv decwidth=3 ;
run ;

* NOTE : Sudaan does not provide graphing ability so diagnostics are not shown ;

title " Use Pfeffermann method (Q weighted)" ;
proc glm data=c7_nhanes ;
 class ridreth1 (ref=first) riagendr (ref=first) ;
 model wtmec2yr=ridreth1 riagendr agec / solution ;
 output out=outq predicted=w_hat ;
run ;

* create new weight and re-run final model ;
data c7_nhanes_Q ;
 set outq ;
 q_wtmec2yr=wtmec2yr/w_hat ;
run ;

title "Final Model with Interactions Included, Numbers for Table 7.6 using Q weight" ;
proc regress data=c7_nhanes_q design=wr deft1 ;
nest sdmvstra sdmvpsu ; weight q_wtmec2yr ;
```

```
class ridreth1 riagendr / nofreq ;
reflevel ridreth1=1 riagendr=1 ;
subpopn age18p=1 ;
model bpxdi1 1 = ridreth1 riagendr agec agecsq ridreth1*agec ridreth1*agecsq riagendr*agec riagendr*agecsq ;
setenv decwidth=3 ;
run ;
```

Output SUDAAN Analysis Example Replication C7

       Section 7.5: Application of Linear Regression, Bivariate relationships


```
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```

DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU


```
Number of observations read       :   9338    Weighted count:306590681
Number of observations skipped    :    418
(WEIGHT variable nonpositive)
Observations in subpopulation     :   5615    Weighted count:232002539
Observations used in the analysis :   5112    Weighted count:212747914
Denominator degrees of freedom    :     17
```

Maximum number of estimable parameters for the model is 5

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.004955


```
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```

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #4	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	69.804	0.630	0.453	68.848	70.760	154.013	0.000	0.205
1=mex 2=oth hisp 3=white 4=black 5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-0.155	2.960	1.456	-3.226	2.916	-0.106	0.916	2.119
3	2.185	1.513	0.743	0.618	3.752	2.942	0.009	0.552
4	2.290	0.910	0.703	0.807	3.773	3.258	0.005	0.494
5	1.306	0.759	0.704	-0.181	2.792	1.853	0.081	0.496

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	5.000	2.546	10058.765	0.000	25612.941	0.000	7438.247	0.000
MODEL MINUS INTERCEPT	4.000	2.169	2.442	0.114	5.298	0.082	4.771	0.009
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	2.169	2.442	0.114	5.298	0.082	4.771	0.009

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	5688.072	0.000	37191.237	0.000
MODEL MINUS INTERCEPT	3.929	0.024	19.085	0.001
INTERCEPT	.	.	.	.
RIDRETH1	3.929	0.024	19.085	0.001

Section 7.5: Application of Linear Regression, Bivariate relationships

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
     Sample Weight: WTMEC2YR
     Stratification Variables(s): SDMVSTRA
     Primary Sampling Unit: SDMVPSU

Number of observations read   :   9338   Weighted count:306590681
Number of observations skipped   :   418
(WEIGHT variable nonpositive)
Observations in subpopulation   :   5615   Weighted count:232002539
Observations used in the analysis :   4845   Weighted count:205481295
Denominator degrees of freedom   :   17

Maximum number of estimable parameters for the model is 3

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 221 records
Minimum cluster size is 61 records

Weighted mean response is 71.928170

Multiple R-Square for the dependent variable BPXDI1_1: 0.001496

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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

							P-value	
Independent							T-Test	
Variables and	Beta	DEFF		Lower 95%	Upper 95%		B=0	
Effects	Coeff.	Beta #4	SE Beta	Limit Beta	Limit Beta	T-Test B=0		Var Beta
----
Intercept	72.180	6.141	0.515	71.093	73.266	140.172	0.000	0.265
1=married 2=prev								
married 3=never								
married								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-0.145	2.625	0.698	-1.617	1.327	-0.208	0.838	0.487
3	-1.121	4.054	0.844	-2.901	0.659	-1.329	0.201	0.712

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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	3.000	1.961	12150.711	0.000	23831.393	0.000	9755.659	0.000
MODEL MINUS								
INTERCEPT	2.000	1.899	1.101	0.352	2.091	0.330	0.902	0.424
INTERCEPT	.	.	.	.	.	.	.	.
MARCAT	2.000	1.899	1.101	0.352	2.091	0.330	0.902	0.424

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	8607.935	0.000	29266.978	0.000
MODEL MINUS				
INTERCEPT	0.849	0.446	1.805	0.406
INTERCEPT	.	.	.	.
MARCAT	0.849	0.446	1.805	0.406

```
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```

DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU

```
Number of observations read       :   9338    Weighted count:306590681
Number of observations skipped    :    418
(WEIGHT variable nonpositive)
Observations in subpopulation     :   5615    Weighted count:232002539
Observations used in the analysis :   5112    Weighted count:212747914
Denominator degrees of freedom    :     17
```

Maximum number of estimable parameters for the model is 2

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.009245

```
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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #4	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	72.726	6.757	0.590	71.481	73.971	123.245	0.000	0.348
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-2.200	3.176	0.568	-3.399	-1.002	-3.875	0.001	0.323

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	2.000	1.576	15345.694	0.000	24184.433	0.000	10111.022	0.000
MODEL MINUS INTERCEPT	1.000	1.000	15.012	0.001	15.012	0.000	15.012	0.001
INTERCEPT	.	.	.	.	.	.	.	.
RIAGENDR	1.000	1.000	15.012	0.001	15.012	0.000	15.012	0.001

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	9516.256	0.000	20222.043	0.000
MODEL MINUS INTERCEPT	15.012	0.001	15.012	0.000
INTERCEPT	.	.	.	.
RIAGENDR	15.012	0.001	15.012	0.000

Section 7.5: Application of Linear Regression, Bivariate relationships


```
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU


Number of observations read       :    9338    Weighted count:306590681
Number of observations skipped    :     418
(WEIGHT variable nonpositive)
Observations in subpopulation     :    5615    Weighted count:232002539
Observations used in the analysis :    5112    Weighted count:212747914
Denominator degrees of freedom    :      17


Maximum number of estimable parameters for the model is  2

File C7_NHANES contains    31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is  64 records

Weighted mean response is 71.608772


Multiple R-Square for the dependent variable BPXDI1_1: 0.003612
```

```
Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.
```

Independent Variables and Effects	Beta Coeff.	DEFF Beta #4	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	71.604	9.803	0.500	70.548	72.659	143.140	0.000	0.250
AGEC	0.039	4.255	0.019	-0.000	0.079	2.087	0.052	0.000

```
Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.
```

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	2.000	1.682	14311.459	0.000	24078.583	0.000	10755.694	0.000
MODEL MINUS								
INTERCEPT	1.000	1.000	4.354	0.052	4.354	0.037	4.354	0.052
INTERCEPT	1.000	1.000	20489.019	0.000	20489.019	0.000	20489.019	0.000
AGEC	1.000	1.000	4.354	0.052	4.354	0.037	4.354	0.052

```
Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.
```

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	10123.006	0.000	21511.388	0.000
MODEL MINUS				
INTERCEPT	4.354	0.052	4.354	0.037
INTERCEPT	20489.019	0.000	20489.019	0.000
AGEC	4.354	0.052	4.354	0.037

```
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```

DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a Simple Random Sample (SRS)
Design

```
Number of observations read        :    9756    Weighted count:      9756
Observations in subpopulation      :    5864    Weighted count:      5864
Observations used in the analysis  :    5112    Weighted count:      5112
Denominator degrees of freedom     :    9755
```

Maximum number of estimable parameters for the model is 7

File C7_NHANES contains 9756 Clusters
5112 clusters were used to fit the model
Maximum cluster size is   1 records
Minimum cluster size is   1 records

Weighted mean response is 71.016823

Multiple R-Square for the dependent variable BPXDI1_1: 0.017979

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Variance Estimation Method: Taylor Series (SRS)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	70.784	0.529	69.747	71.820	133.810	0.000	0.280
1=mex 2=oth hisp 3=white 4=black 5=other							
1	0.000	0.000	0.000	0.000	.	.	0.000
2	0.255	0.708	-1.132	1.643	0.361	0.718	0.501
3	1.193	0.579	0.058	2.327	2.061	0.039	0.335
4	2.205	0.617	0.995	3.415	3.573	0.000	0.381
5	2.013	0.630	0.778	3.248	3.195	0.001	0.397
Gender							
1	0.000	0.000	0.000	0.000	.	.	0.000
2	-2.404	0.331	-3.053	-1.754	-7.255	0.000	0.110
AGEC	0.041	0.010	0.023	0.060	4.312	0.000	0.000

Variance Estimation Method: Taylor Series (SRS)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	7.000	6.868	26361.502	0.000	181046.945	0.000	26899.413	0.000
MODEL MINUS								
INTERCEPT	6.000	5.925	15.624	0.000	92.569	0.000	14.842	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	3.961	5.539	0.000	21.939	0.000	5.394	0.000
RIAGENDR	1.000	1.000	52.638	0.000	52.638	0.000	52.638	0.000
AGEC	1.000	1.000	18.592	0.000	18.592	0.000	18.592	0.000

Variance Estimation Method: Taylor Series (SRS)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	26882.868	0.000	188295.889	0.000
MODEL MINUS				
INTERCEPT	14.835	0.000	89.054	0.000
INTERCEPT	.	.	.	.
RIDRETH1	5.392	0.000	21.576	0.000
RIAGENDR	52.638	0.000	52.638	0.000
AGEC	18.592	0.000	18.592	0.000

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Analysis Example 7.5: Weighted and Without Design Correction: NHANES, Table 7.3

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): _ONE_
    Primary Sampling Unit: Observation Number

Number of observations read   :   9338   Weighted count:306590681
Number of observations skipped   :   418
(WEIGHT variable nonpositive)
Observations in subpopulation   :   5615   Weighted count:232002539
Observations used in the analysis :   5112   Weighted count:212747914
Denominator degrees of freedom   :   9337

Maximum number of estimable parameters for the model is 7

File C7_NHANES contains 9338 Clusters
5112 clusters were used to fit the model
Maximum cluster size is   1 records
Minimum cluster size is   1 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.017423

Date: 05-18-2017   SUDAAN   Page: 1
Time: 09:44:17   Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

							P-value	
Independent							T-Test	
Variables and	Beta	DEFF	SE	Lower 95%	Upper 95%	T-Test	B=0	
Effects	Coeff.	Beta #4	Beta	Limit Beta	Limit Beta	B=0		Var Beta
----
Intercept	71.149	0.915	0.566	70.040	72.258	125.738	0.000	0.320
1=mex 2=oth hisp								
3=white 4=black								
5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-0.141	0.733	0.721	-1.554	1.271	-0.196	0.844	0.519
3	1.904	1.009	0.610	0.708	3.101	3.119	0.002	0.373
4	2.302	0.771	0.645	1.038	3.566	3.570	0.000	0.416
5	1.262	0.766	0.705	-0.120	2.643	1.790	0.073	0.497
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-2.291	1.840	0.432	-3.137	-1.445	-5.308	0.000	0.186
AGEC	0.037	1.557	0.012	0.014	0.060	3.177	0.001	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	7.000	5.400	23564.733	0.000	127244.486	0.000	22019.096	0.000
MODEL MINUS								
INTERCEPT	6.000	5.121	13.302	0.000	68.115	0.000	10.419	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	3.677	6.040	0.000	22.207	0.000	6.255	0.000
RIAGENDR	1.000	1.000	28.180	0.000	28.180	0.000	28.180	0.000
AGEC	1.000	1.000	10.093	0.001	10.093	0.001	10.093	0.001

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	22004.947	0.000	154133.675	0.000
MODEL MINUS				
INTERCEPT	10.413	0.000	62.514	0.000
INTERCEPT	.	.	.	.
RIDRETH1	6.253	0.000	25.020	0.000
RIAGENDR	28.180	0.000	28.180	0.000
AGEC	10.093	0.001	10.093	0.001

Correct analysis with weights and complex sample features, Table 7.4

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU

Number of observations read   :   9338   Weighted count:306590681
Number of observations skipped   :   418
(WEIGHT variable nonpositive)
Observations in subpopulation   :   5615   Weighted count:232002539
Observations used in the analysis :   5112   Weighted count:212747914
Denominator degrees of freedom   :   17

Maximum number of estimable parameters for the model is 7

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.017423

Date: 05-18-2017   SUDAAN   Page: 1
Time: 09:44:17   Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #4	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	71.149	0.767	0.518	70.056	72.241	137.364	0.000	0.268
1=mex 2=oth hisp 3=white 4=black 5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-0.141	2.668	1.375	-3.042	2.759	-0.103	0.919	1.890
3	1.904	1.772	0.809	0.197	3.611	2.354	0.031	0.655
4	2.302	0.819	0.665	0.900	3.704	3.464	0.003	0.442
5	1.262	0.770	0.707	-0.229	2.753	1.786	0.092	0.499
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-2.291	2.970	0.548	-3.448	-1.134	-4.178	0.001	0.301
AGEC	0.037	5.017	0.021	-0.007	0.081	1.770	0.095	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	7.000	3.606	7330.276	0.000	26434.098	0.000	6160.652	0.000
MODEL MINUS								
INTERCEPT	6.000	3.256	4.973	0.010	16.195	0.001	14.345	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	2.135	1.928	0.174	4.116	0.142	4.808	0.009
RIAGENDR	1.000	1.000	17.458	0.001	17.458	0.000	17.458	0.001
AGEC	1.000	1.000	3.132	0.095	3.132	0.077	3.132	0.095

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	3986.304	0.000	43124.563	0.000
MODEL MINUS				
INTERCEPT	10.126	0.000	86.068	0.000
INTERCEPT	.	.	.	.
RIDRETH1	3.959	0.024	19.231	0.001
RIAGENDR	17.458	0.001	17.458	0.000
AGEC	3.132	0.095	3.132	0.077

Output Diagnostic Graphics Not Available in Sudaan, Can Be Done in SAS or Other Software That Offers Graphical Ability

Analysis with weights and complex sample features plus Age Squared

```
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```

DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU


```
Number of observations read       :   9338    Weighted count:306590681
Number of observations skipped    :    418
(WEIGHT variable nonpositive)
Observations in subpopulation     :   5615    Weighted count:232002539
Observations used in the analysis :   5112    Weighted count:212747914
Denominator degrees of freedom    :     17
```

Maximum number of estimable parameters for the model is 8

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.114062

Date: 05-18-2017   SUDAAN   Page: 1
Time: 09:44:17   Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	74.462	1.253	0.565	73.270	75.655	131.731	0.000	0.320
1=mex 2=oth hisp 3=white 4=black 5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	0.218	3.239	1.217	-2.350	2.786	0.179	0.860	1.482
3	2.084	2.923	0.857	0.276	3.893	2.432	0.026	0.735
4	2.511	1.312	0.734	0.963	4.059	3.422	0.003	0.538
5	1.410	1.095	0.687	-0.041	2.860	2.051	0.056	0.472
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-2.169	3.330	0.489	-3.202	-1.137	-4.433	0.000	0.239
AGEC	0.075	3.783	0.016	0.042	0.108	4.802	0.000	0.000
AGECSQ	-0.012	2.441	0.001	-0.013	-0.010	-16.284	0.000	0.000

```
Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.
```

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	8.000	3.345	8230.362	0.000	27528.068	0.000	10995.245	0.000
MODEL MINUS INTERCEPT	7.000	3.475	34.110	0.000	118.526	0.000	247.062	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	2.144	2.150	0.145	4.610	0.113	3.901	0.020
RIAGENDR	1.000	1.000	19.655	0.000	19.655	0.000	19.655	0.000
AGEC	1.000	1.000	23.060	0.000	23.060	0.000	23.060	0.000
AGECSQ	1.000	1.000	265.179	0.000	265.179	0.000	265.179	0.000

```
Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.
```

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	6467.791	0.000	87961.964	0.000
MODEL MINUS INTERCEPT	159.864	0.000	1729.433	0.000
INTERCEPT	.	.	.	.
RIDRETH1	3.213	0.046	15.606	0.004
RIAGENDR	19.655	0.000	19.655	0.000
AGEC	23.060	0.000	23.060	0.000
AGECSQ	265.179	0.000	265.179	0.000

Interaction Tests for Preliminary Model: Test Race/Ethnicity X Age

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU

Number of observations read   :   9338   Weighted count:306590681
Number of observations skipped   :   418
(WEIGHT variable nonpositive)
Observations in subpopulation   :   5615   Weighted count:232002539
Observations used in the analysis :   5112   Weighted count:212747914
Denominator degrees of freedom   :   17

Maximum number of estimable parameters for the model is 16

File C7_NHANES contains   31 Clusters
   31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.116525

Date: 05-18-2017   SUDAAN   Page: 1
Time: 09:44:17   Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	74.859	1.216	0.761	73.254	76.464	98.400	0.000	0.579
1=mex 2=oth hisp 3=white 4=black 5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	0.224	0.876	0.928	-1.733	2.181	0.242	0.812	0.861
3	1.399	1.611	0.907	-0.515	3.313	1.542	0.141	0.823
4	3.342	1.100	0.962	1.312	5.371	3.474	0.003	0.925
5	1.085	0.942	0.900	-0.813	2.983	1.206	0.244	0.809
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-2.168	3.344	0.490	-3.202	-1.135	-4.426	0.000	0.240
AGEC	0.061	0.854	0.033	-0.008	0.131	1.857	0.081	0.001
AGECSQ	-0.014	0.866	0.002	-0.017	-0.010	-7.476	0.000	0.000
1=mex 2=oth hisp 3=white 4=black 5=other, AGEC								
1, 1	0.000	.	0.000	0.000	0.000	.	.	0.000
2, 1	0.056	0.944	0.047	-0.044	0.156	1.179	0.254	0.002
3, 1	-0.001	1.820	0.050	-0.106	0.104	-0.023	0.982	0.002
4, 1	0.040	0.672	0.036	-0.036	0.116	1.110	0.283	0.001
5, 1	0.019	0.961	0.046	-0.077	0.115	0.417	0.682	0.002
1=mex 2=oth hisp 3=white 4=black 5=other, AGECSQ								
1, 1	0.000	.	0.000	0.000	0.000	.	.	0.000
2, 1	0.001	1.329	0.003	-0.006	0.008	0.376	0.712	0.000
3, 1	0.003	0.594	0.002	-0.000	0.006	1.889	0.076	0.000
4, 1	-0.002	0.538	0.002	-0.006	0.002	-1.081	0.295	0.000
5, 1	0.002	1.073	0.003	-0.004	0.007	0.637	0.532	0.000

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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	16.000	3.819	6728.739	0.000	25695.158	0.000	16570.264	0.000
MODEL MINUS								
INTERCEPT	15.000	4.304	25.877	0.000	111.387	0.000	2013.114	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	2.667	2.812	0.076	7.501	0.044	4.863	0.008
RIAGENDR	1.000	1.000	19.594	0.000	19.594	0.000	19.594	0.000
AGEC	.	.	.	.	.	.	.	.
AGECSQ	.	.	.	.	.	.	.	.
AGEC * RIDRETH1	4.000	2.492	0.862	0.462	2.147	0.443	3.905	0.020
AGECSQ * RIDRETH1	4.000	2.692	2.612	0.090	7.033	0.056	7.037	0.002
Race and Age and Age Squared								
Interactions	8.000	3.926	1.787	0.179	7.018	0.130	11.895	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	1949.443	0.001	265124.217	0.000
MODEL MINUS				
INTERCEPT	355.255	0.000	30196.709	0.000
INTERCEPT	.	.	.	.
RIDRETH1	4.005	0.023	19.451	0.001
RIAGENDR	19.594	0.000	19.594	0.000
AGEC	.	.	.	.
AGECSQ	.	.	.	.
AGEC * RIDRETH1	3.216	0.045	15.620	0.004
AGECSQ * RIDRETH1	5.795	0.006	28.147	0.000
Race and Age and Age Squared				
Interactions	6.997	0.003	95.164	0.000

```
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
    Sample Weight: WTMEC2YR
    Stratification Variables(s): SDMVSTRA
    Primary Sampling Unit: SDMVPSU


Number of observations read       :    9338    Weighted count:306590681
Number of observations skipped    :     418
(WEIGHT variable nonpositive)
Observations in subpopulation     :    5615    Weighted count:232002539
Observations used in the analysis :    5112    Weighted count:212747914
Denominator degrees of freedom    :      17


Maximum number of estimable parameters for the model is 10

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is  64 records

Weighted mean response is 71.608772


Multiple R-Square for the dependent variable BPXDI1_1: 0.117898
```

```
Date: 05-18-2017                              SUDAAN                                      Page:  1
Time: 09:44:17                                                                           Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.
```

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	Var Beta
Intercept	74.985	1.484	0.646	73.622	76.347	116.127	0.000	0.417
1=mex 2=oth hisp 3=white 4=black 5=other								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	0.206	3.188	1.209	-2.345	2.756	0.170	0.867	1.461
3	2.099	2.821	0.845	0.315	3.883	2.483	0.024	0.715
4	2.540	1.304	0.733	0.994	4.086	3.466	0.003	0.537
5	1.427	1.104	0.692	-0.033	2.887	2.063	0.055	0.479
Gender								
1	0.000	.	0.000	0.000	0.000	.	.	0.000
2	-3.171	3.937	0.757	-4.768	-1.573	-4.187	0.001	0.573
AGEC	0.048	1.981	0.016	0.014	0.083	2.952	0.009	0.000
AGECSQ	-0.014	1.534	0.001	-0.015	-0.012	-16.165	0.000	0.000
Gender, AGEC								
1, 1	0.000	.	0.000	0.000	0.000	.	.	0.000
2, 1	0.048	2.140	0.023	-0.001	0.096	2.074	0.054	0.001
Gender, AGECSQ								
1, 1	0.000	.	0.000	0.000	0.000	.	.	0.000
2, 1	0.003	3.123	0.002	-0.000	0.007	2.035	0.058	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	10.000	4.048	7199.301	0.000	29142.522	0.000	11540.326	0.000
MODEL MINUS								
INTERCEPT	9.000	4.498	28.929	0.000	130.115	0.000	393.177	0.000
INTERCEPT	.	.	.	.	.	.	.	.
RIDRETH1	4.000	2.158	2.197	0.139	4.742	0.107	4.012	0.018
RIAGENDR	1.000	1.000	17.533	0.001	17.533	0.000	17.533	0.001
AGEC	.	.	.	.	.	.	.	.
AGECSQ	.	.	.	.	.	.	.	.
AGEC * RIAGENDR	1.000	1.000	4.300	0.054	4.300	0.038	4.300	0.054
AGECSQ * RIAGENDR	1.000	1.000	4.140	0.058	4.140	0.042	4.140	0.058
Gender and Age and Age Squared Interactions	2.000	1.912	4.776	0.024	9.132	0.009	5.357	0.016

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	5430.742	0.000	115403.264	0.000
MODEL MINUS				
INTERCEPT	208.153	0.000	3538.594	0.000
INTERCEPT	.	.	.	.
RIDRETH1	3.304	0.042	16.047	0.003
RIAGENDR	17.533	0.001	17.533	0.000
AGEC	.	.	.	.
AGECSQ	.	.	.	.
AGEC * RIAGENDR	4.300	0.054	4.300	0.038
AGECSQ * RIAGENDR	4.140	0.058	4.140	0.042
Gender and Age and Age Squared Interactions	5.042	0.020	10.714	0.005

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Final Model with Interactions Included, Numbers for Table 7.6
(Note that Marginal Predicted Values will be Added Once the Ability to Produce in Correct Format is Added)

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
     Sample Weight: WTMEC2YR
     Stratification Variables(s): SDMVSTRA
     Primary Sampling Unit: SDMVPSU

Number of observations read   :   9338   Weighted count:306590681
Number of observations skipped   :   418
(WEIGHT variable nonpositive)
Observations in subpopulation   :   5615   Weighted count:232002539
Observations used in the analysis :   5112   Weighted count:212747914
Denominator degrees of freedom   :   17

WARNING: DDF (17) < maximum number of independent parameters in the model (18)
Tests of hypothesis may be different for different choices of reference level

File C7_NHANES contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Weighted mean response is 71.608772

Multiple R-Square for the dependent variable BPXDI1_1: 0.120334

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
Intercept	75.346	1.351	0.819	73.618	77.075	91.991	0.000
1=mex 2=oth hisp 3=white 4=black 5=other							
1	0.000	.	0.000	0.000	0.000	.	.
2	0.271	0.860	0.921	-1.672	2.215	0.295	0.772
3	1.461	1.608	0.910	-0.460	3.382	1.605	0.127
4	3.450	1.093	0.961	1.422	5.478	3.590	0.002
5	1.144	0.929	0.895	-0.744	3.032	1.279	0.218
Gender							
1	0.000	.	0.000	0.000	0.000	.	.
2	-3.195	3.961	0.759	-4.797	-1.593	-4.208	0.001
AGEC	0.039	1.138	0.040	-0.045	0.123	0.986	0.338
AGECSQ	-0.015	0.776	0.002	-0.019	-0.011	-8.426	0.000
1=mex 2=oth hisp 3=white 4=black 5=other, AGEC							
1, 1	0.000	.	0.000	0.000	0.000	.	.
2, 1	0.050	1.007	0.050	-0.055	0.154	0.999	0.332
3, 1	-0.004	1.958	0.053	-0.117	0.108	-0.084	0.934
4, 1	0.035	0.741	0.039	-0.047	0.116	0.892	0.385
5, 1	0.015	1.070	0.049	-0.089	0.119	0.303	0.766
1=mex 2=oth hisp 3=white 4=black 5=other, AGECSQ							
1, 1	0.000	.	0.000	0.000	0.000	.	.
2, 1	0.001	1.487	0.003	-0.006	0.008	0.243	0.811
3, 1	0.003	0.671	0.002	-0.001	0.006	1.552	0.139
4, 1	-0.002	0.622	0.002	-0.007	0.002	-1.195	0.249
5, 1	0.001	1.240	0.003	-0.005	0.008	0.484	0.634
Gender, AGEC							
1, 1	0.000	.	0.000	0.000	0.000	.	.
2, 1	0.045	2.238	0.023	-0.004	0.095	1.938	0.069
Gender, AGECSQ							
1, 1	0.000	.	0.000	0.000	0.000	.	.
2, 1	0.003	3.274	0.002	-0.000	0.007	2.037	0.058

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	17.000	62731.791	0.000
MODEL MINUS INTERCEPT	17.000	2995.131	0.000
INTERCEPT	.	.	.
RIDRETH1	4.000	5.193	0.006
RIAGENDR	1.000	17.710	0.001
AGEC	.	.	.
AGECSQ	.	.	.
AGEC * RIDRETH1	4.000	3.084	0.044
AGECSQ * RIDRETH1	4.000	6.439	0.002
AGEC * RIAGENDR	1.000	3.757	0.069
AGECSQ * RIAGENDR	1.000	4.148	0.058

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                      Use Pfeffermann method (Q weighted)

                           The GLM Procedure

                        Class Level Information

                  Class         Levels    Values

                  RIDRETH1          5     2 3 4 5 1

                  RIAGENDR          2     2 1


                Number of Observations Read        9756
                Number of Observations Used        9756

                      Use Pfeffermann method (Q weighted)

                           The GLM Procedure

          Dependent Variable: WTMEC2YR   Full sample 2 year MEC exam weight

                                        Sum of
      Source                   DF        Squares      Mean Square    F Value    Pr > F

      Model                     6    4.9921232E12    832020525279    1143.25    <.0001

      Error                  9749    7.0950221E12    727769222.08

      Corrected Total        9755    1.2087145E13


                R-Square     Coeff Var     Root MSE     WTMEC2YR Mean

                0.413011     85.84395      26977.20        31425.86


      Source                   DF      Type I SS     Mean Square    F Value    Pr > F

      RIDRETH1                  4    4.8420933E12   1.2105233E12    1663.33    <.0001
      RIAGENDR                  1    8127518971.5   8127518971.5      11.17    0.0008
      agec                      1    141902371760   141902371760     194.98    <.0001


      Source                   DF    Type III SS     Mean Square    F Value    Pr > F

      RIDRETH1                  4    4.4577235E12   1.1144309E12    1531.30    <.0001
      RIAGENDR                  1    7184507364.5   7184507364.5       9.87    0.0017
      agec                      1    141902371760   141902371760     194.98    <.0001


                                          Standard
            Parameter          Estimate       Error    t Value    Pr > |t|

            Intercept       24948.55321 B   826.842014     30.17    <.0001
            RIDRETH1  2     -3410.17192 B  1105.368730     -3.09    0.0020
            RIDRETH1  3     40374.18828 B   901.335647     44.79    <.0001
            RIDRETH1  4     -9093.87677 B   903.702190    -10.06    <.0001
            RIDRETH1  5     -8421.65485 B   989.514053     -8.51    <.0001
            RIDRETH1  1         0.00000 B          .          .         .
            RIAGENDR  2      1716.86166 B   546.428883      3.14    0.0017
            RIAGENDR  1         0.00000 B          .          .         .
            agec              158.49692      11.350705     13.96    <.0001

NOTE: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations.  Terms
      whose estimates are followed by the letter 'B' are not uniquely estimable.
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                        S U D A A N
         Software for the Statistical Analysis of Correlated Data
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                        Release 11.0.1


DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
     Sample Weight: Q_WTMEC2YR
     Stratification Variables(s): SDMVSTRA
     Primary Sampling Unit: SDMVPSU


Number of observations read        :   9338    Weighted count:     9807
Number of observations skipped     :    418
(WEIGHT variable nonpositive)
Observations in subpopulation      :   5615    Weighted count:     6588
Observations used in the analysis  :   5112    Weighted count:     6034
Denominator degrees of freedom     :     17


WARNING: DDF (17) < maximum number of independent parameters in the model (18)
Tests of hypothesis may be different for different choices of reference level


File C7_NHANES_Q contains   31 Clusters
  31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is  64 records

Weighted mean response is 71.207919


Multiple R-Square for the dependent variable BPXDI1_1: 0.144598
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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Independent Variables and Effects.

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                                                                                              P-value
 Independent                                                                                  T-Test
  Variables and      Beta       DEFF                  Lower 95%   Upper 95%                    B=0
  Effects            Coeff.     Beta #1    SE Beta     Limit Beta  Limit Beta   T-Test B=0    B=0
----------------------------------------------------------------------------------------------------
Intercept            75.413     1.446      0.772       73.784      77.043       97.623        0.000
1=mex 2=oth hisp
  3=white 4=black
  5=other
  1                   0.000     .          0.000        0.000       0.000        .            .
  2                   0.248     1.223      0.954       -1.765       2.260        0.260        0.798
  3                   1.501     1.637      0.895       -0.387       3.389        1.678        0.112
  4                   3.566     1.687      0.989        1.479       5.654        3.605        0.002
  5                   1.238     1.343      0.892       -0.645       3.120        1.387        0.183
Gender
  1                   0.000     .          0.000        0.000       0.000        .            .
  2                  -3.429     2.310      0.633       -4.764      -2.094       -5.419        0.000
AGEC                  0.047     1.340      0.040       -0.039       0.132        1.157        0.263
AGECSQ               -0.015     0.807      0.002       -0.018      -0.011       -8.794        0.000
1=mex 2=oth hisp
  3=white 4=black
  5=other, AGEC
  1, 1                0.000     .          0.000        0.000       0.000        .            .
  2, 1                0.048     1.109      0.047       -0.052       0.148        1.016        0.324
  3, 1               -0.006     1.921      0.051       -0.114       0.103       -0.107        0.916
  4, 1                0.036     0.873      0.037       -0.042       0.114        0.971        0.345
  5, 1                0.013     1.263      0.046       -0.085       0.111        0.273        0.788
1=mex 2=oth hisp
  3=white 4=black
  5=other, AGECSQ
  1, 1                0.000     .          0.000        0.000       0.000        .            .
  2, 1                0.001     1.817      0.003       -0.006       0.008        0.308        0.762
  3, 1                0.003     0.729      0.002       -0.001       0.006        1.470        0.160
  4, 1               -0.003     0.830      0.002       -0.007       0.001       -1.368        0.189
  5, 1                0.001     1.826      0.003       -0.005       0.008        0.407        0.689
Gender, AGEC
  1, 1                0.000     .          0.000        0.000       0.000        .            .
  2, 1                0.034     2.276      0.026       -0.021       0.090        1.301        0.211
Gender, AGECSQ
  1, 1                0.000     .          0.000        0.000       0.000        .            .
  2, 1                0.003     2.556      0.002       -0.001       0.006        1.776        0.094
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Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Identity
Response variable BPXDI1_1: BPXDI1_1
For Subpopulation: AGE18P = 1
by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	17.000	131262.311	0.000
MODEL MINUS			
INTERCEPT	17.000	5770.929	0.000
INTERCEPT	.	.	.
RIDRETH1	4.000	5.503	0.005
RIAGENDR	1.000	29.369	0.000
AGEC	.	.	.
AGECSQ	.	.	.
AGEC * RIDRETH1	4.000	3.621	0.026
AGECSQ * RIDRETH1	4.000	6.612	0.002
AGEC * RIAGENDR	1.000	1.692	0.211
AGECSQ * RIAGENDR	1.000	3.155	0.094