
log: c:\NHANES\log\logistic.log
log type: text
opened on: 4 Aug 2008, 10:37:43

.
. use "C:\NHANES\data\analysis_data.dta", clear

.
. ***create variable codes*****
. capture drop age

. gen age=1 if ridageyr >=20 & ridageyr <40
(17384 missing values generated)

. replace age=2 if ridageyr >=40 & ridageyr <60
(2965 real changes made)

. replace age=3 if ridageyr >=60 & ridageyr <.
(3706 real changes made)

.
. capture drop hichol

. gen hichol =1 if lbxtc >=240 & lbxtc<. | bpq100d==1
(18432 missing values generated)

. replace hichol =0 if hichol !=1 & lbxtc !=.
(13291 real changes made)

.
. capture drop bmigrp

. gen bmigrp=1 if bmx bmi<25
(11362 missing values generated)

. replace bmigrp=2 if bmx bmi>=25 & bmx bmi <30
(4295 real changes made)

. replace bmigrp=3 if bmx bmi>=30 & bmx bmi <.
(3535 real changes made)

.
. capture drop hyper

. gen hyper=1 if (bpxsar>=140 & bpxsar<. | bpxdar>=90 & bpxdar <.) | bpq050a==
> 1
(17447 missing values generated)

. replace hyper=0 if hyper !=1 & (bpxsar !=. & bpxdar !=.)
(11824 real changes made)

.
. capture drop logtrig

```

. gen logtrig = log(lbxtr)
(13513 missing values generated)

.
. ****format variables*****
. capture label drop agefmt

. label define agefmt 1 "20-39"

. label define agefmt 2 "40-59", add

. label define agefmt 3 "60+", add

.
. capture label drop chfmt

. label define chfmt 1 "high cholesterol"

. label define chfmt 0 "no high cholesterol", add

.
. capture label drop bmifmt

. label define bmifmt 1 "<25",

. label define bmifmt 2 "25-29", add

. label define bmifmt 3 "30+", add

.
. capture label drop bpfmt

. label define bpfmt 1 "hypertension"

. label define bpfmt 0 "no hypertension", add

.
. capture label drop sexfmt

. label define sexfmt 1 "male"

. label define sexfmt 2 "female", add

.
. label values age agefmt

. label values hichol chfmt

. label values bmigrp bmifmt

. label values hyper bpfmt

. label values riagendr sexfmt

```

```
.
. capture drop eligible

. gen eligible=1 if wtsaf4yr!=. & hyper!=. & riagendr!=. & age!=. & hichol!=. &
> bmigrp!=. & logtrig!=. & wtsaf4yr!=0
(17185 missing values generated)
```

```
.
. char riagendr [omit]2

. char age [omit] 2

. char bmigrp [omit] 2

. char hichol [omit] 1
```

```
. *****Run univariate logistic regression model*****
. svyset [w=wtmec4yr], psu(sdmvpsu) strata (sdmvstra)
(sampling weights assumed)
```

```

      pweight: wtmec4yr
      VCE: linearized
Single unit: missing
  Strata 1: sdmvstra
      SU 1: sdmvpsu
      FPC 1: <zero>
```

```
. xi: svy, subpop (if eligible==1): logistic hyper i.riagendr
i.riagendr      _Iriagendr_1-2      (naturally coded; _Iriagendr_2 omitted)
(running logistic on estimation sample)
```

Survey: Logistic regression

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 21004 |
| Number of PSUs | = | 57 | Population size | = | 278652243 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |
| | | | F(1, 29) | = | 2.12 |
| | | | Prob > F | = | 0.1560 |

```
-----
```

| | | Linearized | | | | |
|--------------|--|------------|-----------|-------|----------------------|-------------------|
| hyper | | Odds Ratio | Std. Err. | t | P> t | |
| | | | | | [95% Conf. Interval] | |
| _Iriagendr_1 | | .8867327 | .0731923 | -1.46 | 0.156 | .7489912 1.049805 |

```
-----
```

```
. xi: svy, subpop (if eligible==1): logistic hyper i.age
i.age      _Iage_1-3      (naturally coded; _Iage_2 omitted)
(running logistic on estimation sample)
```

Survey: Logistic regression

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 21004 |
| Number of PSUs | = | 57 | Population size | = | 278652243 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |
| | | | F(2, 28) | = | 289.58 |
| | | | Prob > F | = | 0.0000 |

```

-----
            |
            |           Linearized
hyper | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
_Iage_1 |   .2486849   .0377611    -9.16  0.000     .182296   .3392513
_Iage_3 |   4.866761   .614833     12.53  0.000     3.758607  6.301633
-----

```

. xi: svy, subpop (if eligible==1): logistic hyper i.hichol
i.hichol _Ihichol_0-1 (naturally coded; _Ihichol_1 omitted)
(running logistic on estimation sample)

Survey: Logistic regression

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 21004 |
| Number of PSUs | = | 57 | Population size | = | 278652243 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |
| | | | F(1, 29) | = | 102.81 |
| | | | Prob > F | = | 0.0000 |

```

-----
            |
            |           Linearized
hyper | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
_Ihichol_0 | .4050751   .0361015   -10.14  0.000     .3375777  .4860685
-----

```

. xi: svy, subpop (if eligible==1): logistic hyper i.bmigrp
i.bmigrp _Ibmigrp_1-3 (naturally coded; _Ibmigrp_2 omitted)
(running logistic on estimation sample)

Survey: Logistic regression

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 21004 |
| Number of PSUs | = | 57 | Population size | = | 278652243 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |
| | | | F(2, 28) | = | 68.82 |
| | | | Prob > F | = | 0.0000 |

| hyper | Odds Ratio | Linearized Std. Err. | t | P> t | [95% Conf. Interval] | |
|------------|------------|----------------------|-------|-------|----------------------|----------|
| _Ibmigrp_1 | .5773393 | .0619517 | -5.12 | 0.000 | .4635738 | .719024 |
| _Ibmigrp_3 | 1.852645 | .1765425 | 6.47 | 0.000 | 1.524581 | 2.251302 |

```
. svyset [w=wtsaf4yr], psu(sdmvpsu) strata (sdmvstra)
(sampling weights assumed)
```

```
    pweight: wtsaf4yr
      VCE: linearized
Single unit: missing
  Strata 1: sdmvstra
    SU 1: sdmvpsu
    FPC 1: <zero>
```

```
. xi: svy, subpop (if eligible==1): logistic hyper logtrig
(running logistic on estimation sample)
```

Survey: Logistic regression

| | | | | | |
|------------------|---|----|--------------------|---|-----------|
| Number of strata | = | 28 | Number of obs | = | 8379 |
| Number of PSUs | = | 57 | Population size | = | 267014588 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 187943376 |
| | | | Design df | = | 29 |
| | | | F(1, 29) | = | 60.56 |
| | | | Prob > F | = | 0.0000 |

| hyper | Odds Ratio | Linearized Std. Err. | t | P> t | [95% Conf. Interval] | |
|---------|------------|----------------------|------|-------|----------------------|--------|
| logtrig | 1.97783 | .1733361 | 7.78 | 0.000 | 1.653273 | 2.3661 |

```
. *****Run multiple logistic regression model*****
. svyset [w=wtsaf4yr], psu(sdmvpsu) strata (sdmvstra)
(sampling weights assumed)
```

```
    pweight: wtsaf4yr
      VCE: linearized
Single unit: missing
  Strata 1: sdmvstra
    SU 1: sdmvpsu
    FPC 1: <zero>
```

```
. xi: svy, subpop(if eligible==1): logistic hyper i.riagendr i.age i.hichol i
> .bmigrp logtrig
i.riagendr    _Iriagendr_1-2    (naturally coded; _Iriagendr_2 omitted)
i.age         _Iage_1-3        (naturally coded; _Iage_2 omitted)
```

```

i.hichol      _Ihichol_0-1      (naturally coded; _Ihichol_1 omitted)
i.bmigrp      _Ibmigrp_1-3      (naturally coded; _Ibmigrp_2 omitted)
(running logistic on estimation sample)

```

Survey: Logistic regression

```

Number of strata =      28      Number of obs      =      8379
Number of PSUs   =      57      Population size     = 267014588
Subpop. no. of obs =      3819
Subpop. size     = 187943376
Design df       =      29
F( 7, 23)      =      85.78
Prob > F       =      0.0000

```

```

-----+-----
          |              Linearized
hyper | Odds Ratio  Std. Err.      t    P>|t|    [95% Conf. Interval]
-----+-----
_Iriagendr_1 | .9400051   .0948715   -0.61  0.545   .7646874   1.155517
_Iage_1      | .2812185   .0425102  -8.39  0.000   .206431    .3831007
_Iage_3      |  5.2683    .711406   12.31  0.000   3.996943   6.944054
_Ihichol_0   | .7754214   .0852633  -2.31  0.028   .6192558   .9709692
_Ibmigrp_1   | .6703929   .0866999  -3.09  0.004   .5145849   .8733771
_Ibmigrp_3   | 2.182772   .266867    6.38  0.000   1.699858   2.802877
logtrig     | 1.285051   .1399956    2.30  0.029   1.028383   1.60578
-----+-----

```

```

. count if hyper!=. & age!=. & riagendr!=. & hichol!=. & bmigrp!=. & logtrig!=.
4159

```

```

.
. ***Or, produce the beta coefficients*****
. xi: svy, subpop(if eligible==1): logit hyper i.riagendr i.age i.hichol i.bmi
> grp logtrig
i.riagendr      _Iriagendr_1-2      (naturally coded; _Iriagendr_2 omitted)
i.age           _Iage_1-3           (naturally coded; _Iage_2 omitted)
i.hichol        _Ihichol_0-1        (naturally coded; _Ihichol_1 omitted)
i.bmigrp        _Ibmigrp_1-3        (naturally coded; _Ibmigrp_2 omitted)
(running logit on estimation sample)

```

Survey: Logistic regression

```

Number of strata =      28      Number of obs      =      8379
Number of PSUs   =      57      Population size     = 267014588
Subpop. no. of obs =      3819
Subpop. size     = 187943376
Design df       =      29
F( 7, 23)      =      85.78
Prob > F       =      0.0000

```

```

-----+-----
          |              Linearized
hyper | Coef.  Std. Err.      t    P>|t|    [95% Conf. Interval]
-----+-----

```

```

_Iriagendr_1 | -.06187 .1009266 -0.61 0.545 -.2682881 .1445482
_Iage_1 | -1.268623 .1511643 -8.39 0.000 -1.577789 -.9594575
_Iage_3 | 1.661708 .1350352 12.31 0.000 1.38553 1.937886
_Ihichol_0 | -.2543487 .1099574 -2.31 0.028 -.4792369 -.0294605
_Ibmigrp_1 | -.3998913 .129327 -3.09 0.004 -.6643947 -.1353879
_Ibmigrp_3 | .7805955 .1222606 6.38 0.000 .5305445 1.030647
logtrig | .2507988 .1089417 2.30 0.029 .027988 .4736095
_cons | -2.115802 .6188593 -3.42 0.002 -3.381511 -.8500923

```

```

. count if hyper!=. & age!=. & riagendr!=. & hichol!=. & bmigrp!=. & logtrig!=.
4159

```

```

. ***Or, produce the odds ratios using logit command*****
. xi: svy, subpop(if eligible==1): logit hyper i.riagendr i.age i.hichol i.bmi
> grp logtrig,or
i.riagendr _Iriagendr_1-2 (naturally coded; _Iriagendr_2 omitted)
i.age _Iage_1-3 (naturally coded; _Iage_2 omitted)
i.hichol _Ihichol_0-1 (naturally coded; _Ihichol_1 omitted)
i.bmigrp _Ibmigrp_1-3 (naturally coded; _Ibmigrp_2 omitted)
(running logit on estimation sample)

```

Survey: Logistic regression

```

Number of strata = 28 Number of obs = 8379
Number of PSUs = 57 Population size = 267014588
Subpop. no. of obs = 3819
Subpop. size = 187943376
Design df = 29
F( 7, 23) = 85.78
Prob > F = 0.0000

```

```

-----+-----
             |                Linearized
hyper | Odds Ratio   Std. Err.      t    P>|t|      [95% Conf. Interval]
-----+-----
_Iriagendr_1 | .9400051   .0948715    -0.61  0.545    .7646874   1.155517
_Iage_1 | .2812185   .0425102   -8.39  0.000    .206431   .3831007
_Iage_3 | 5.2683     .711406    12.31  0.000    3.996943   6.944054
_Ihichol_0 | .7754214   .0852633   -2.31  0.028    .6192558   .9709692
_Ibmigrp_1 | .6703929   .0866999   -3.09  0.004    .5145849   .8733771
_Ibmigrp_3 | 2.182772   .266867    6.38  0.000    1.699858   2.802877
logtrig | 1.285051   .1399956    2.30  0.029    1.028383   1.60578
-----+-----

```

```

. count if hyper!=. & age!=. & riagendr!=. & hichol!=. & bmigrp!=. & logtrig!=.
4159

```

```

. *****Produce percent with hypertension by select variables*****
. svyset [w=wtmec4yr], psu(sdmvpsu) strata (sdmvstra)
(sampling weights assumed)

```

pweight: wtmecl4yr
 VCE: linearized
 Single unit: missing
 Strata 1: sdmvstra
 SU 1: sdmvpsu
 FPC 1: <zero>

. svy, subpop (if eligible==1): tab hyper riagendr, row col
 (running tabulate on estimation sample)

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 15381 |
| Number of PSUs | = | 57 | Population size | = | 238875322 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |

```

-----
      | gender - adjudicated.
hyper | male  female  Total
-----+-----
no hyper | .4987  .5013    1
      | .7283  .7039  .7158
      |
hyperten | .4687  .5313    1
      | .2717  .2961  .2842
      |
Total   | .4902  .5098    1
      |      1      1    1
-----
  
```

Key: row proportions
 column proportions

Pearson:
 Uncorrected chi2(1) = 11.2764
 Design-based F(1, 29) = 2.1220 P = 0.1559

. count if hyper!=. & riagendr!=.
 15381

. svy, subpop (if eligible==1): tab hyper age, row col
 (running tabulate on estimation sample)

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 9384 |
| Number of PSUs | = | 57 | Population size | = | 192513425 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |

```

-----
      |          age
hyper | 20-39  40-59  60+  Total
-----+-----
no hyper | .5075  .3894  .1031    1
  
```


| | | | | |
|----------|-------|-------|-------|-------|
| | .9116 | .7193 | .345 | .7158 |
| hyperten | .1241 | .3828 | .4932 | 1 |
| | .0884 | .2807 | .655 | .2842 |
| Total | .3985 | .3875 | .2139 | 1 |
| | 1 | 1 | 1 | 1 |

Key: row proportions
column proportions

Pearson:

Uncorrected chi2(2) = 2062.0566
Design-based F(1.79, 51.84) = 244.1473 P = 0.0000

. count if hyper!=. & age!=.
9384

. svy, subpop (if eligible==1): tab hyper hichol, row col
(running tabulate on estimation sample)

| | | | | | |
|------------------|---|----|--------------------|---|------------|
| Number of strata | = | 28 | Number of obs | = | 14081 |
| Number of PSUs | = | 57 | Population size | = | 224376389 |
| | | | Subpop. no. of obs | = | 3819 |
| | | | Subpop. size | = | 81624707.4 |
| | | | Design df | = | 29 |

| | | | | |
|----------|-------|---------|----------|-------|
| | | hichol | | |
| hyper | | no high | high cho | Total |
| no hyper | .8067 | .1933 | | 1 |
| | .7638 | .5671 | | .7158 |
| hyperten | .6284 | .3716 | | 1 |
| | .2362 | .4329 | | .2842 |
| Total | .7561 | .2439 | | 1 |
| | 1 | 1 | | 1 |

Key: row proportions
column proportions

Pearson:

Uncorrected chi2(1) = 494.0321
Design-based F(1, 29) = 106.1447 P = 0.0000

. count if hyper!=. & hichol!=.
14081

. svy, subpop (if eligible==1): tab hyper bmigrp, row col
(running tabulate on estimation sample)

| | | | | | |
|------------------|---|----|---------------|---|-------|
| Number of strata | = | 28 | Number of obs | = | 14749 |
|------------------|---|----|---------------|---|-------|

Number of PSUs = 57

Population size = 232838107

Subpop. no. of obs = 3819

Subpop. size = 81624707.4

Design df = 29

```

-----
      |           |
      |           |           bmigrp
      | hyper | <25  25-29  30+  Total
-----+-----
no hyper | .417  .351  .232  1
      | .8168 .7202 .5814 .7158
      |
hyperten | .2357 .3436 .4207 1
      | .1832 .2798 .4186 .2842
      |
      Total | .3655 .3489 .2856 1
      | 1 1 1 1
-----

```

Key: row proportions
column proportions

Pearson:

Uncorrected chi2(2) = 644.5745
 Design-based F(1.98, 57.40) = 67.4667 P = 0.0000

. count if hyper!=. & bmigrp!=.
14749

.
 . log close
 log: c:\NHANES\log\logistic.log
 log type: text
 closed on: 4 Aug 2008, 10:38:00