```
* IVEware Analysis Examples Replication for ASDA 3rd Edition
* Berglund Winter 2025
* Chapter 12 ;

libname d "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code" ;

ods listing ;
ods graphics off ;
options nodate nonumber nocenter ls=119 ps=68 ;

*set options and location to call IVEware from SAS session ;
options set=srclib "E:\ive 11feb24\sas" sasautos=('!srclib' sasautos) mautosource ;

* Prepare data for analysis ;
data c12_nhanes ;
 set d.nhanes1112 ;
 age18p=0 ;
  if age >= 18 then age18p=1 ;

 if age18p=1 and wtmec2yr > 0 ;

 descode = sdmvstra*10+sdmvpsu ;

 high_diastolic=0 ;
   if bpxdi1 >= 90 and bpxdi1 ne . then high_diastolic=1 ; else if bpxdi1 =. then high_diastolic=. ;
 agec=age-46.36 ;
 agecsq=agec*agec ;

 * reverse coding of class variables to match lowest omitted group of Stata.  IVEware omits highest category by default
and does not allow user to specify omitted
 group in code ;
  rev_race=6-ridreth1 ;
  rev_gender=3-riagendr ;
  rev_dbp=2-high_diastolic ;
run ;


ods rtf style=normalprinter bodytitle file="P:\ASDA3\Replication Iveware\Chapter 12\Analysis Example Replication ASDA3
IVE C12 Code and Results.rtf" ;

ods html5 ;
title "Examine Missing Data Problem" ;
proc mi nimpute=0 ;
 var bpxdi1 bmxbmi indfmpir marcat riagendr ridreth1 agec agecsq wtmec2yr descode ;
run ;
ods html5 close ;

*************************************************************************************************;
* Complete Case Analyses, use SAS for weighted means without design based SE's ;
title "Weighted Complete Case Analysis for Table 12.3" ;
proc means data=c12_nhanes n nmiss mean ;
 var bpxdi1 bmxbmi indfmpir ;
 weight wtmec2yr ;
run ;


title ;
* IVEware DESCRIBE / TABLE analysis of high blood pressure, note: IVEware does not offer a logit option for CI, use
default ;
%describe (setup=new, name="Example for Table 12.4" , dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
 title "CC Analysis Weighted and Design Based SE for High Diastolic BP, Table 12.4" ;
 datain c12_nhanes ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_diastolic ;
```

```
run;

%regress  (setup=new, name="Logistic Regression for Table 12.5 ", dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
 title "CC Analysis Logistic Regression for Table 12.5" ;
 datain c12_nhanes ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;

*************************************************************************************************;
* MI Analyses ;
* Method 1: with Design Variables in Imputation Model ;
 data c12_nhanes_m1 ;
  set c12_nhanes ;
  if age18p=1 and wtmec2yr > 0 ;
  * keep only variables needed for imputation process ;
  keep riagendr ridreth1 agec agecsq wtmec2yr descode bmxbmi marcat indfmpir bpxdi1 sdmvstra sdmvpsu  ;
 run ;

* Use IMPUTE module for imputation and analysis of imputed data sets in IVEware ;
%impute (setup=new, name="Example MI with Design Variables in Imputation Models ",
        dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
  title Method 1 with Design Variables in Models, Numbers for Table 12.5 ;
  datain c12_nhanes_m1 ;
  dataout outimpm1 all ;
  default continuous ;
  transfer sdmvstra sdmvpsu ;
  categorical marcat descode riagendr ridreth1 ;
  bounds bpxdi1 (>=10, <=120) indfmpir (>=0, <=5) ;
  multiples 5 ;
  seed 2016 ;
  iterations 5 ;
run;

data outimpm1 ;
  set outimpm1 ;
   if bpxdi1 >=90 then high_dbp =1 ; else if . < bpxdi1 < 90 then high_dbp=0 ; else high_dbp=. ;
 * reverse coding of class variables to match lowest omitted group of Stata.
   IVEware omits highest category by default and does not allow user to specify omitted group in code ;
  rev_race=6-ridreth1 ;
  rev_gender=3-riagendr ;
  rev_dbp=2-high_dbp ;
run ;

* Use DESCRIBE to obtain mean by multiple for 3 variables imputed, Numbers for Table 12.3  ;
%describe (setup=new, name="Example MI Method 1 with Design Variable in Models",
        dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
 title Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)  ;
 datain outimpm1 ;
 by _mult_ ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 mean bmxbmi indfmpir bpxdi1 ;
run;

* Use DESCRIBE to analyze and combine results from 5 imputed data sets ;
%describe (setup=new, name="Example MI Method 1 with Design Variable in Models",
        dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
 title High Blood Pressure, Numbers for Table 12.4 MI method 1 (Design Variable in Model)  ;
 datain outimpm1 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_dbp ;
```

```
run;

%regress  (setup=new, name="MI Method 1 with Design Vars Logistic Regression for Table 12.5 ",
  dir=P:\ASDA3\Replication Iveware\Chapter 12) ; ;
 title "MI Method 1 with Design Vars, Logistic Regression for Table 12.5" ;
 datain outimpm1 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;

****;
* MI Method 2 : without Design Variables in Imputation Model ;
 data c12_nhanes_m2 ;
  set c12_nhanes ;
 if age18p=1 and wtmec2yr > 0 ;
  * keep only variables needed for imputation process, remove descode for this method  ;
  keep riagendr ridreth1 agec agecsq wtmec2yr bmxbmi marcat indfmpir bpxdi1 sdmvstra sdmvpsu  ;
 run ;

* Use IMPUTE module for imputation and analysis of imputed data sets in IVEware ;
%impute (setup=new, name="Example MI without Design Variables in Imputation Models ",
        dir=P:\ASDA3\Replication Iveware\Chapter 12) ;

  title Method 2 without Design Variables in Models, Numbers for Table 12.5 ;
  datain c12_nhanes_m2 ;
  dataout outimpm2 all ;
  default continuous ;
  transfer sdmvstra sdmvpsu ;
  categorical marcat riagendr ridreth1 ;
  bounds bpxdi1 (>=10, <=120) indfmpir (>=0, <=5) ;
  multiples 5 ;
  seed 2016 ;
  iterations 5 ;
run;

data outimpm2 ;
  set outimpm2 ;
   if bpxdi1 >=90 then high_dbp =1 ; else if . < bpxdi1 < 90 then high_dbp=0 ; else high_dbp=. ;
 * reverse coding of class variables to match lowest omitted group of Stata.
   IVEware omits highest category by default and does not allow user to specify omitted group in code ;
  rev_race=6-ridreth1 ;
  rev_gender=3-riagendr ;
  rev_dbp=2-high_dbp ;
run ;

* Use DESCRIBE to analyze and combine results from 5 imputed data sets ;
%describe (setup=new, name="Example MI Method 2 without Design Variable in Models",
        dir=P:\ASDA3\Replication Iveware\Chapter 12)  ;
 title High Blood Pressure, Numbers for Table 12.4 MI method 2 (NO Design Variable in Model)  ;
 datain outimpm2 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_dbp ;
run;

%regress  (setup=new, name="MI Method 2 without Design Vars Logistic Regression for Table 12.5
",dir=P:\ASDA3\Replication Iveware\Chapter 12) ;
 title "MI Method 2 without Design Vars, Logistic Regression for Table 12.5" ;
 datain outimpm2 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
```

```
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;

ods text="No FEFI Available in IVEware" ;

ods rtf close ;
```

Examine Missing Data Problem

The MI Procedure

Model Information	
Data Set	WORK.DATA2
Method	MCMC
Multiple Imputation Chain	Single Chain
Initial Estimates for MCMC	EM Posterior Mode
Start	Starting Value
Prior	Jeffreys
Number of Imputations	0
Number of Burn-in Iterations	200
Number of Iterations	100
Seed for random number generator	296942001

Missing Data Patterns

Group	BPXDI1	bmxbmi	indfmpir	marcat	riagendr	RIDRETH1	agec	agecsq	WTMEC2YR	descode	Freq	Percent
1	X	X	X	X	X	X	X	X	X	X	4430	78.90
2	X	X	X	.	X	X	X	X	X	X	231	4.11
3	X	X	.	X	X	X	X	X	X	X	371	6.61
4	X	X	.	.	X	X	X	X	X	X	32	0.57
5	X	.	X	X	X	X	X	X	X	X	49	0.87
6	X	.	X	.	X	X	X	X	X	X	7	0.12
7	X	.	.	X	X	X	X	X	X	X	12	0.21
8	.	X	X	X	X	X	X	X	X	X	372	6.63
9	.	X	X	.	X	X	X	X	X	X	21	0.37
10	.	X	.	X	X	X	X	X	X	X	60	1.07
11	.	X	.	.	X	X	X	X	X	X	8	0.14
12	.	.	X	X	X	X	X	X	X	X	17	0.30
13	.	.	X	.	X	X	X	X	X	X	1	0.02
14	.	.	.	X	X	X	X	X	X	X	4	0.07

Missing Data Patterns

Group	Group Means									
	BPXDI1	bmxbmi	indfmpir	marcat	riagendr	RIDRETH1	agec	agecsq	WTMEC2YR	descode
1	71.339955	28.782009	2.443962	1.653499	1.498871	3.304740	2.069571	316.388209	43485	960.049210
2	61.965368	25.516450	1.604935	.	1.471861	3.190476	-27.814545	773.896873	27536	962.822511
3	71.110512	28.007817	.	1.684636	1.466307	3.412399	5.610350	364.275692	31374	960.576819
4	58.625000	26.118750	.	.	1.500000	3.562500	-24.703750	783.438350	26245	960.500000
5	68.040816	.	1.951429	1.693878	1.489796	3.142857	12.313469	469.841437	32027	970.346939
6	42.285714	.	0.647143	.	2.000000	3.000000	-27.788571	772.449600	17208	971.857143
7	66.666667	.	.	1.916667	1.583333	3.333333	12.806667	440.149600	20355	972.500000
8	.	29.639785	2.159086	1.626344	1.623656	3.204301	0.330860	302.220890	40734	959.513441
9	.	28.476190	1.714762	.	1.476190	3.095238	-27.645714	764.489600	30193	961.619048
10	.	27.501667	.	1.416667	1.566667	3.433333	6.856667	330.750267	33288	960.033333
11	.	26.650000	.	.	1.500000	2.500000	-15.735000	706.074600	14549	964.375000
12	.	.	2.145882	1.647059	1.882353	3.705882	3.404706	358.242541	35291	969.823529
13	.	.	0.180000	.	2.000000	5.000000	-27.360000	748.569600	15276	981.000000
14	.	.	.	1.500000	1.250000	3.000000	16.390000	594.319600	18287	921.750000

Weighted Complete Case Analysis for Table 12.3

The MEANS Procedure

Variable	Label	N	N Miss	Mean
BPXDI1	Diastolic: Blood pres (1st rdg) mm Hg	5132	483	71.3855358
bmxbmi	Body Mass Index (kg/m**2)	5525	90	28.6232688
indfmpir	Ratio of family income to poverty	5128	487	2.8592364

```
IVEware Setup Checker, Sun Mar 02 09:18:18 2025                                  1

Setup listing:

 title "CC Analysis Weighted and Design Based SE for High Diastolic BP, Table
 12.4" ;
 datain c12_nhanes ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_diastolic ;
run;
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:19 2025    1

"CC Analysis Weighted and Design Based SE for High Diastolic BP, Table 12.4"

Stratum variable:       sdmvstra  Masked variance pseudo-stratum
Cluster variable:       sdmvpsu  Masked variance pseudo-PSU
Weight variable:        WTMEC2YR  Full sample 2 year MEC exam weight

Analysis description:

         4  Variables
        14  Strata
        31  Secus

    Strata  Model
        14  Multiple PSU
         0  Paired Selection
         0  Successive Differences

      5615  Cases Read
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:19 2025
2

"CC Analysis Weighted and Design Based SE for High Diastolic BP, Table 12.4"

     Problem  1

Degrees of freedom
                          17

         Factor   Covariance of denominator
           None        0.06226

          Table      Number of         Sum of       Weighted       Standard
 high_diastolic          Cases        Weights     Proportion          Error
              0           4815   2.004736e+08        0.93937        0.00793
              1            317   1.293962e+07        0.06063        0.00793

                         Lower          Upper         T Test     Prob > |T|
                         Bound          Bound
              0        0.92263        0.95610      118.43007        0.00000
              1        0.04390        0.07737        7.64410        0.00000

                    Unweighted           Bias         Design
                    Proportion                        Effect
              0        0.93823       -0.12110        5.66779
              1        0.06177        1.87616        5.66779
```

Setup listing:

```
 title "CC Analysis Logistic Regression for Table 12.5" ;
 datain c12_nhanes ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;
```

IVEware Jackknife Regression Procedure, Sun Mar 02 09:18:21 2025 1

"CC Analysis Logistic Regression for Table 12.5"

Regression type: Logistic
Dependent variable: rev_dbp
Predictors: rev_race
rev_gender
agec
agecsq
Cat. var. ref. codes: rev_race 5
rev_gender 2
rev_dbp 2
Stratum variable: sdmvstra Masked variance pseudo-stratum
Cluster variable: sdmvpsu Masked variance pseudo-PSU
Weight variable: WTMEC2YR Full sample 2 year MEC exam weight

Valid cases 5132
Sum weights 213413218.4
Replicates 17

Degr freedom 17

-2 LogLike 93700957

Variable	Estimate	Std Error	T Test	Prob > |T|
Intercept	-2.2488728	0.1848484	-12.16604	0.00000
rev_race.1	0.0507633	0.2525161	0.20103	0.84306
rev_race.2	0.6547399	0.2245280	2.91607	0.00963
rev_race.3	0.1312073	0.2386353	0.54982	0.58959
rev_race.4	-0.7242047	0.2349887	-3.08187	0.00676
rev_gender	-0.5497255	0.2220861	-2.47528	0.02414
agec	0.0082898	0.0079124	1.04770	0.30944
agecsq	-0.0016242	0.0003019	-5.37914	0.00005

Variable	Odds Ratio	95% Confidence Interval Lower	Upper
Intercept			
rev_race.1	1.0520738	0.6175476	1.7923466
rev_race.2	1.9246418	1.1984477	3.0908702
rev_race.3	1.1402041	0.6891687	1.8864255
rev_race.4	0.4847099	0.2952338	0.7957885
rev_gender	0.5771082	0.3612134	0.9220417
agec	1.0083243	0.9916313	1.0252982
agecsq	0.9983771	0.9977413	0.9990133

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
Intercept	0.71184	-2.3452238	4.28442
rev_race.1	0.97370	0.2774792	446.61389
rev_race.2	0.93949	0.7479480	14.23590
rev_race.3	1.03215	0.2540647	93.63617
rev_race.4	0.50368	-0.4025930	-44.40896
rev_gender	3.36751	-0.5737724	4.37434
agec	3.68989	0.0138422	66.97804

"CC Analysis Logistic Regression for Table 12.5"

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
agecsq	1.66771	-0.0017670	8.78894

```
IVEware Setup Checker, Sun Mar 02 09:18:26 2025                    1

Setup listing:

  title Method 1 with Design Variables in Models, Numbers for Table 12.5 ;
  datain c12_nhanes_m1 ;
  dataout outimpm1 all ;
  default continuous ;
  transfer sdmvstra sdmvpsu ;
  categorical marcat descode riagendr ridreth1 ;
  bounds bpxdi1 (>=10, <=120) indfmpir (>=0, <=5) ;
  multiples 5 ;
  seed 2016 ;
  iterations 5 ;
run;
```

```
IVEware Iterative Imputation Procedure, Sun Mar 02 09:18:37 2025   1

Method 1 with Design Variables in Models, Numbers for Table 12.5

Imputation 1

Variable          Observed          Imputed    Double counted
riagendr              5615                0                 0
RIDRETH1              5615                0                 0
WTMEC2YR              5615                0                 0
indfmpir              5128              487                 0
BPXDI1                5132              483                 0
bmxbmi                5525               90                 0
marcat                5315              300                 0
descode               5615                0                 0
agec                  5615                0                 0
agecsq                5615                0                 0

Variable indfmpir
                  Observed          Imputed          Combined
  Number              5128              487              5615
 Minimum                 0         0.040985                 0
 Maximum                 5            4.999                 5
    Mean           2.37393           2.4989           2.38476
 Std Dev           1.66622           1.28064           1.63666

Variable BPXDI1
                  Observed          Imputed          Combined
  Number              5132              483              5615
 Minimum                 0           33.9843                 0
 Maximum               120           111.707               120
    Mean           70.7401           71.6524           70.8185
 Std Dev           12.7121           12.7534           12.7171

Variable bmxbmi
                  Observed          Imputed          Combined
  Number              5525               90              5615
 Minimum              13.4             11.739             11.739
 Maximum              82.1            47.5657              82.1
    Mean           28.6177           28.7786           28.6202
 Std Dev           6.92018           7.50428           6.92924

Variable marcat
                  Observed          Imputed          Combined
    Code       Freq    Per       Freq    Per       Freq    Per
       1       2991  56.27         76  25.33       3067  54.62
       2       1183  22.26          3   1.00       1186  21.12
       3       1141  21.47        221  73.67       1362  24.26
   Total       5315 100.00        300 100.00       5615 100.00
```

Method 1 with Design Variables in Models, Numbers for Table 12.5

Imputation 2

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
descode	5615	0	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0264733	0
Maximum	5	4.95872	5
Mean	2.37393	2.50117	2.38496
Std Dev	1.66622	1.24419	1.63424

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	33.4849	0
Maximum	120	102.607	120
Mean	70.7401	71.4836	70.804
Std Dev	12.7121	12.5506	12.6989

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	10.6052	10.6052
Maximum	82.1	49.0013	82.1
Mean	28.6177	29.4648	28.6312
Std Dev	6.92018	7.45213	6.92913

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	77	25.67	3068	54.64
2	1183	22.26	5	1.67	1188	21.16
3	1141	21.47	218	72.67	1359	24.20
Total	5315	100.00	300	100.00	5615	100.00

Method 1 with Design Variables in Models, Numbers for Table 12.5

Imputation 3

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
descode	5615	0	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.048181	0
Maximum	5	4.99002	5
Mean	2.37393	2.53231	2.38766
Std Dev	1.66622	1.2673	1.63599

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	36.4107	0
Maximum	120	103.244	120
Mean	70.7401	71.2665	70.7853
Std Dev	12.7121	12.9159	12.7294

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	13.819	13.4
Maximum	82.1	45.6321	82.1
Mean	28.6177	29.0257	28.6242
Std Dev	6.92018	6.67143	6.91588

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	56	18.67	3047	54.27
2	1183	22.26	3	1.00	1186	21.12
3	1141	21.47	241	80.33	1382	24.61
Total	5315	100.00	300	100.00	5615	100.00

Method 1 with Design Variables in Models, Numbers for Table 12.5

Imputation 4

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
descode	5615	0	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0296443	0
Maximum	5	4.985	5
Mean	2.37393	2.56879	2.39083
Std Dev	1.66622	1.22057	1.63323

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	35.4327	0
Maximum	120	109.283	120
Mean	70.7401	71.0103	70.7633
Std Dev	12.7121	13.0476	12.7403

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	12.0066	12.0066
Maximum	82.1	48.0257	82.1
Mean	28.6177	28.1442	28.6101
Std Dev	6.92018	6.59895	6.91484

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	66	22.00	3057	54.44
2	1183	22.26	7	2.33	1190	21.19
3	1141	21.47	227	75.67	1368	24.36
Total	5315	100.00	300	100.00	5615	100.00

Method 1 with Design Variables in Models, Numbers for Table 12.5

Imputation 5

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
descode	5615	0	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0381589	0
Maximum	5	4.99857	5
Mean	2.37393	2.43974	2.37963
Std Dev	1.66622	1.21582	1.6321

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	30.8662	0
Maximum	120	113.655	120
Mean	70.7401	71.7191	70.8243
Std Dev	12.7121	13.4896	12.7825

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	17.0782	13.4
Maximum	82.1	42.4287	82.1
Mean	28.6177	29.3118	28.6288
Std Dev	6.92018	5.64581	6.90174

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	82	27.33	3073	54.73
2	1183	22.26	6	2.00	1189	21.18
3	1141	21.47	212	70.67	1353	24.10
Total	5315	100.00	300	100.00	5615	100.00

```
IVEware Setup Checker, Sun Mar 02 09:18:44 2025                    1

Setup listing:

 title Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1
 (Design Variable in Model)  ;
 datain outimpm1 ;
 by _mult_ ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 mean bmxbmi indfmpir bpxdi1 ;
run;
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025    1

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable

By variables:           _mult_
Stratum variable:       sdmvstra  Masked variance pseudo-stratum
Cluster variable:       sdmvpsu  Masked variance pseudo-PSU
Weight variable:        WTMEC2YR  Full sample 2 year MEC exam weight

Analysis description:

         7  Variables
        14  Strata
        31  Secus

    Strata  Model
        14  Multiple PSU
         0  Paired Selection
         0  Successive Differences

     28075  Cases Read
```

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
2

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

By Condition
mult
1

Problem 1

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean bmxbmi	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
	5615	2.320025e+08	28.62658	0.2150553

Lower Bound	Upper Bound	T Test	Prob > |T|
28.17285	29.08031	133.11267	0.00000

Unweighted Mean	Bias	Design Effect
28.62024	-0.02213	5.78645

By Condition
mult
1

Problem 2

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean indfmpir	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
	5615	2.320025e+08	2.848925	0.1018275

Lower Bound	Upper Bound	T Test	Prob > |T|
2.634088	3.063763	27.97796	0.00000

Unweighted Mean	Bias	Design Effect
2.384764	-16.29249	20.80730

By Condition
mult
1

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
3

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

     Problem  3

Degrees of freedom
                          17

         Factor   Covariance of denominator
           None        0.06037

           Mean      Number of         Sum of       Weighted       Standard
         BPXDI1          Cases        Weights           Mean          Error
                          5615   2.320025e+08       71.41062      0.5051332

                         Lower          Upper         T Test     Prob > |T|
                         Bound          Bound
                      70.34488       72.47636      141.36987        0.00000

                    Unweighted           Bias         Design
                          Mean                      Effect
                      70.81854       -0.82913        9.71019

By Condition
         _mult_
              2

     Problem  4

Degrees of freedom
                          17

         Factor   Covariance of denominator
           None        0.06037

           Mean      Number of         Sum of       Weighted       Standard
         bmxbmi          Cases        Weights           Mean          Error
                          5615   2.320025e+08       28.65623      0.2202336

                         Lower          Upper         T Test     Prob > |T|
                         Bound          Bound
                      28.19158       29.12088      130.11741        0.00000

                    Unweighted           Bias         Design
                          Mean                      Effect
                      28.63124       -0.08720        6.06071

By Condition
         _mult_
              2
```

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
4

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 5

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
indfmpir	5615	2.320025e+08	2.846663	0.1029246

Lower Bound	Upper Bound	T Test	Prob > |T|
2.629511	3.063815	27.65775	0.00000

Unweighted Mean	Bias	Design Effect
2.384962	-16.21903	21.38847

By Condition
mult
2

Problem 6

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
BPXDI1	5615	2.320025e+08	71.32343	0.506365

Lower Bound	Upper Bound	T Test	Prob > |T|
70.25509	72.39177	140.85380	0.00000

Unweighted Mean	Bias	Design Effect
70.80402	-0.72825	9.82445

By Condition
mult
3

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
5

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 7

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
bmxbmi	5615	2.320025e+08	28.6343	0.2140973

Lower Bound	Upper Bound	T Test	Prob > |T|
28.18259	29.08601	133.74433	0.00000

Unweighted Mean	Bias	Design Effect
28.6242	-0.03526	5.75337

By Condition
mult
3

Problem 8

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
indfmpir	5615	2.320025e+08	2.85463	0.1016557

Lower Bound	Upper Bound	T Test	Prob > |T|
2.640156	3.069105	28.08137	0.00000

Unweighted Mean	Bias	Design Effect
2.387662	-16.35827	20.73943

By Condition
mult
3

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
6

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 9

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
BPXDI1	5615	2.320025e+08	71.38867	0.5151079

Lower Bound	Upper Bound	T Test	Prob > |T|
70.30189	72.47545	138.58974	0.00000

Unweighted Mean	Bias	Design Effect
70.78534	-0.84514	10.04624

By Condition
mult
4

Problem 10

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
bmxbmi	5615	2.320025e+08	28.6034	0.2120757

Lower Bound	Upper Bound	T Test	Prob > |T|
28.15596	29.05084	134.87355	0.00000

Unweighted Mean	Bias	Design Effect
28.61008	0.02335	5.63886

By Condition
mult
4

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
7

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 11

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean indfmpir	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
	5615	2.320025e+08	2.85884	0.1020007

Lower Bound	Upper Bound	T Test	Prob > |T|
2.643637	3.074043	28.02765	0.00000

Unweighted Mean	Bias	Design Effect
2.390827	-16.37074	20.95043

By Condition
mult
4

Problem 12

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean BPXDI1	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
	5615	2.320025e+08	71.35626	0.5041718

Lower Bound	Upper Bound	T Test	Prob > |T|
70.29255	72.41997	141.53166	0.00000

Unweighted Mean	Bias	Design Effect
70.76331	-0.83098	9.58231

By Condition
mult
5

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
8

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 13

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
bmxbmi	5615	2.320025e+08	28.62646	0.2066914

Lower Bound	Upper Bound	T Test	Prob > |T|
28.19038	29.06254	138.49857	0.00000

Unweighted Mean	Bias	Design Effect
28.62879	0.00815	5.37810

By Condition
mult
5

Problem 14

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of Cases	Sum of Weights	Weighted Mean	Standard Error
indfmpir	5615	2.320025e+08	2.846976	0.102504

Lower Bound	Upper Bound	T Test	Prob > |T|
2.630711	3.06324	27.77428	0.00000

Unweighted Mean	Bias	Design Effect
2.379634	-16.41539	21.18891

By Condition
mult
5

IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:46 2025
9

Numbers for 3 Imputed Variables by Multiple, Table 12.3 MI method 1 (Design Variable in Model)

Problem 15

Degrees of freedom
17

Factor	Covariance of denominator
None	0.06037

Mean	Number of	Sum of	Weighted	Standard
BPXDI1	Cases	Weights	Mean	Error
	5615	2.320025e+08	71.47821	0.4994376

Lower	Upper	T Test	Prob > |T|
Bound	Bound		
70.42449	72.53193	143.11741	0.00000

Unweighted	Bias	Design
Mean		Effect
70.82427	-0.91488	9.43275

```
IVEware Setup Checker, Sun Mar 02 09:18:47 2025                                  1

Setup listing:

 title High Blood Pressure, Numbers for Table 12.4 MI method 1 (Design Variable
 in Model)  ;
 datain outimpm1 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_dbp ;
run;
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:49 2025    1

High Blood Pressure, Numbers for Table 12.4 MI method 1 (Design Variable in Model)

Stratum variable:       sdmvstra  Masked variance pseudo-stratum
Cluster variable:       sdmvpsu  Masked variance pseudo-PSU
Weight variable:        WTMEC2YR  Full sample 2 year MEC exam weight

Analysis description:

         4  Variables
        14  Strata
        31  Secus

    Strata  Model
        14  Multiple PSU
         0  Paired Selection
         0  Successive Differences

     28075  Cases Read
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:18:50 2025
2

High Blood Pressure, Numbers for Table 12.4 MI method 1 (Design Variable in Model)

     Problem  1

Degrees of freedom
                          17

         Factor   Covariance of denominator
           None         0.06037

          Table      Number of         Sum of       Weighted       Standard
      high_dbp          Cases        Weights     Proportion          Error
             0          26313   1.088304e+09        0.93818        0.00811
             1           1762   7.170875e+07        0.06182        0.00811

                        Lower          Upper         T Test     Prob > |T|
                        Bound          Bound
             0        0.92108        0.95528      115.75341        0.00000
             1        0.04472        0.07892        7.62704        0.00000

                   Unweighted           Bias         Design
                   Proportion                        Effect
             0        0.93724       -0.10054       31.79909
             1        0.06276        1.52587       31.79909
```

```
IVEware Setup Checker, Sun Mar 02 09:18:51 2025                                  1

Setup listing:

 title "MI Method 1 with Design Vars, Logistic Regression for Table 12.5" ;
 datain outimpm1 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;
```

```
IVEware Jackknife Regression Procedure, Sun Mar 02 09:18:53 2025                 1

"MI Method 1 with Design Vars, Logistic Regression for Table 12.5"

Regression type:        Logistic
Dependent variable:     rev_dbp
Predictors:             rev_race
                        rev_gender
                        agec
                        agecsq
Cat. var. ref. codes:   rev_race  5
                        rev_gender  2
                        rev_dbp  2
Stratum variable:       sdmvstra  Masked variance pseudo-stratum
Cluster variable:       sdmvpsu  Masked variance pseudo-PSU
Weight variable:        WTMEC2YR  Full sample 2 year MEC exam weight

Valid cases              28075
Sum weights         1160012695
Replicates                 17

Degr freedom               17

-2 LogLike          517075286.9

Variable              Estimate         Std Error            T Test        Prob > |T|
Intercept           -2.2269254         0.1638266         -13.59319           0.00000
rev_race.1           0.1172013         0.1970014           0.59493           0.55973
rev_race.2           0.6067880         0.2069553           2.93198           0.00931
rev_race.3           0.1329271         0.2542909           0.52274           0.60790
rev_race.4          -0.6291643         0.2127877          -2.95677           0.00883
rev_gender          -0.5073305         0.2130698          -2.38105           0.02922
agec                 0.0083234         0.0077225           1.07781           0.29618
agecsq              -0.0016830         0.0002874          -5.85671           0.00002

Variable                 Odds            95% Confidence Interval
                        Ratio            Lower              Upper
Intercept
rev_race.1           1.1243457         0.7419783         1.7037604
rev_race.2           1.8345295         1.1854833         2.8389253
rev_race.3           1.1421667         0.6679247         1.9531317
rev_race.4           0.5330371         0.3402389         0.8350852
rev_gender           0.6021007         0.3840937         0.9438458
agec                 1.0083581         0.9920619         1.0249221
agecsq               0.9983184         0.9977134         0.9989239

Variable                Design            SRS             % Diff
                        Effect          Estimate         SRS v Est
Intercept              3.18587        -2.3106896           3.76143
rev_race.1             3.38557         0.2729009         132.84813
rev_race.2             4.52669         0.6906087          13.81382
rev_race.3             6.71300         0.2675769         101.29601
rev_race.4             2.41517        -0.3563001         -43.36931
rev_gender            17.54336        -0.5292294           4.31648
agec                  19.32523         0.0131807          58.35729
```

```
IVEware Jackknife Regression Procedure, Sun Mar 02 09:18:58 2025                 2

"MI Method 1 with Design Vars, Logistic Regression for Table 12.5"

Variable                Design            SRS             % Diff
                        Effect          Estimate         SRS v Est
agecsq                 8.27771        -0.0018179           8.01472
```

```
IVEware Setup Checker, Sun Mar 02 09:19:00 2025                    1

Setup listing:

  title Method 2 without Design Variables in Models, Numbers for Table 12.5 ;
  datain c12_nhanes_m2 ;
  dataout outimpm2 all ;
  default continuous ;
  transfer sdmvstra sdmvpsu ;
  categorical marcat riagendr ridreth1 ;
  bounds bpxdi1 (>=10, <=120) indfmpir (>=0, <=5) ;
  multiples 5 ;
  seed 2016 ;
  iterations 5 ;
run;
```

```
IVEware Iterative Imputation Procedure, Sun Mar 02 09:19:11 2025    1

Method 2 without Design Variables in Models, Numbers for Table 12.5

Imputation 1

Variable          Observed           Imputed    Double counted
riagendr              5615                 0                 0
RIDRETH1              5615                 0                 0
WTMEC2YR              5615                 0                 0
indfmpir              5128               487                 0
BPXDI1                5132               483                 0
bmxbmi                5525                90                 0
marcat                5315               300                 0
agec                  5615                 0                 0
agecsq                5615                 0                 0

Variable indfmpir
                  Observed           Imputed          Combined
  Number              5128               487              5615
 Minimum                 0        0.00865035                 0
 Maximum                 5           4.99582                 5
    Mean           2.37393           2.36285           2.37297
 Std Dev           1.66622            1.2174            1.6321

Variable BPXDI1
                  Observed           Imputed          Combined
  Number              5132               483              5615
 Minimum                 0            30.775                 0
 Maximum               120           103.119               120
    Mean           70.7401           70.5067             70.72
 Std Dev           12.7121           12.5135           12.6942

Variable bmxbmi
                  Observed           Imputed          Combined
  Number              5525                90              5615
 Minimum              13.4           11.0423           11.0423
 Maximum              82.1           52.3399              82.1
    Mean           28.6177           28.4749           28.6154
 Std Dev           6.92018            6.8921           6.91914

Variable marcat
                  Observed           Imputed          Combined
    Code       Freq    Per       Freq    Per       Freq    Per
       1       2991  56.27         83  27.67       3074  54.75
       2       1183  22.26          3   1.00       1186  21.12
       3       1141  21.47        214  71.33       1355  24.13
   Total       5315 100.00        300 100.00       5615 100.00
```

Method 2 without Design Variables in Models, Numbers for Table 12.5

Imputation 2

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0107771	0
Maximum	5	4.9882	5
Mean	2.37393	2.36646	2.37328
Std Dev	1.66622	1.22548	1.63263

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	33.0984	0
Maximum	120	105.18	120
Mean	70.7401	69.8532	70.6638
Std Dev	12.7121	11.9608	12.6506

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	9.79667	9.79667
Maximum	82.1	46.2286	82.1
Mean	28.6177	29.0803	28.6251
Std Dev	6.92018	7.71898	6.93319

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	71	23.67	3062	54.53
2	1183	22.26	2	0.67	1185	21.10
3	1141	21.47	227	75.67	1368	24.36
Total	5315	100.00	300	100.00	5615	100.00

Method 2 without Design Variables in Models, Numbers for Table 12.5

Imputation 3

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.00494602	0
Maximum	5	4.98195	5
Mean	2.37393	2.38184	2.37461
Std Dev	1.66622	1.21831	1.63216

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	26.4001	0
Maximum	120	105.017	120
Mean	70.7401	70.9407	70.7573
Std Dev	12.7121	12.2281	12.6702

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	12.2425	12.2425
Maximum	82.1	46.1298	82.1
Mean	28.6177	29.0782	28.625
Std Dev	6.92018	7.07746	6.92233

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	77	25.67	3068	54.64
2	1183	22.26	6	2.00	1189	21.18
3	1141	21.47	217	72.33	1358	24.19
Total	5315	100.00	300	100.00	5615	100.00

Method 2 without Design Variables in Models, Numbers for Table 12.5

Imputation 4

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0156749	0
Maximum	5	4.99102	5
Mean	2.37393	2.35338	2.37214
Std Dev	1.66622	1.22146	1.63237

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	26.5967	0
Maximum	120	114.987	120
Mean	70.7401	70.9021	70.754
Std Dev	12.7121	12.9459	12.7313

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	13.8315	13.4
Maximum	82.1	51.2384	82.1
Mean	28.6177	28.2108	28.6111
Std Dev	6.92018	6.32889	6.91077

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	56	18.67	3047	54.27
2	1183	22.26	8	2.67	1191	21.21
3	1141	21.47	236	78.67	1377	24.52
Total	5315	100.00	300	100.00	5615	100.00

Method 2 without Design Variables in Models, Numbers for Table 12.5

Imputation 5

Variable	Observed	Imputed	Double counted
riagendr	5615	0	0
RIDRETH1	5615	0	0
WTMEC2YR	5615	0	0
indfmpir	5128	487	0
BPXDI1	5132	483	0
bmxbmi	5525	90	0
marcat	5315	300	0
agec	5615	0	0
agecsq	5615	0	0

Variable indfmpir

	Observed	Imputed	Combined
Number	5128	487	5615
Minimum	0	0.0186094	0
Maximum	5	4.96282	5
Mean	2.37393	2.31669	2.36896
Std Dev	1.66622	1.22552	1.63271

Variable BPXDI1

	Observed	Imputed	Combined
Number	5132	483	5615
Minimum	0	31.669	0
Maximum	120	108.575	120
Mean	70.7401	70.0747	70.6828
Std Dev	12.7121	12.8859	12.7273

Variable bmxbmi

	Observed	Imputed	Combined
Number	5525	90	5615
Minimum	13.4	8.31008	8.31008
Maximum	82.1	48.5303	82.1
Mean	28.6177	28.649	28.6182
Std Dev	6.92018	7.64751	6.93169

Variable marcat

	Observed		Imputed		Combined	
Code	Freq	Per	Freq	Per	Freq	Per
1	2991	56.27	52	17.33	3043	54.19
2	1183	22.26	3	1.00	1186	21.12
3	1141	21.47	245	81.67	1386	24.68
Total	5315	100.00	300	100.00	5615	100.00

```
IVEware Setup Checker, Sun Mar 02 09:19:18 2025                                 1

Setup listing:

 title High Blood Pressure, Numbers for Table 12.4 MI method 2 (NO Design
 Variable in Model)  ;
 datain outimpm2 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 table high_dbp ;
run;
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:19:19 2025    1

High Blood Pressure, Numbers for Table 12.4 MI method 2 (NO Design Variable in Model

Stratum variable:       sdmvstra  Masked variance pseudo-stratum
Cluster variable:       sdmvpsu  Masked variance pseudo-PSU
Weight variable:        WTMEC2YR  Full sample 2 year MEC exam weight

Analysis description:

         4  Variables
        14  Strata
        31  Secus

    Strata  Model
        14  Multiple PSU
         0  Paired Selection
         0  Successive Differences

     28075  Cases Read
```

```
IVEware Design-Based Descriptive Statistics Procedure, Sun Mar 02 09:19:19 2025
2

High Blood Pressure, Numbers for Table 12.4 MI method 2 (NO Design Variable in Model)

     Problem  1

Degrees of freedom
                           17

         Factor   Covariance of denominator
           None         0.06037

          Table      Number of         Sum of       Weighted       Standard
      high_dbp          Cases        Weights     Proportion          Error
             0          26340   1.089536e+09        0.93924        0.00689
             1           1735   7.047712e+07        0.06076        0.00689

                        Lower          Upper         T Test     Prob > |T|
                        Bound          Bound
             0        0.92470        0.95379      136.22907        0.00000
             1        0.04621        0.07530        8.81204        0.00000

                   Unweighted           Bias         Design
                   Proportion                        Effect
             0        0.93820       -0.11108       23.38611
             1        0.06180        1.71718       23.38611
```

```
IVEware Setup Checker, Sun Mar 02 09:19:20 2025                                 1

Setup listing:

 title "MI Method 2 without Design Vars, Logistic Regression for Table 12.5" ;
 datain outimpm2 ;
 stratum sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
 class rev_race rev_gender ;
 dependent rev_dbp ;
 predictor rev_race rev_gender agec agecsq ;
 link logistic ;
run;
```

```
IVEware Jackknife Regression Procedure, Sun Mar 02 09:19:22 2025                1
```

"MI Method 2 without Design Vars, Logistic Regression for Table 12.5"

Regression type: Logistic
Dependent variable: rev_dbp
Predictors: rev_race
rev_gender
agec
agecsq
Cat. var. ref. codes: rev_race 5
rev_gender 2
rev_dbp 2
Stratum variable: sdmvstra Masked variance pseudo-stratum
Cluster variable: sdmvpsu Masked variance pseudo-PSU
Weight variable: WTMEC2YR Full sample 2 year MEC exam weight

Valid cases 28075
Sum weights 1160012695
Replicates 17

Degr freedom 17

-2 LogLike 510297802.2

Variable	Estimate	Std Error	T Test	Prob > |T|
Intercept	-2.2303270	0.1626531	-13.71217	0.00000
rev_race.1	0.0550587	0.2312415	0.23810	0.81465
rev_race.2	0.6075330	0.2052525	2.95993	0.00877
rev_race.3	0.1157931	0.2268899	0.51035	0.61637
rev_race.4	-0.7207032	0.2363397	-3.04944	0.00725
rev_gender	-0.5104573	0.2051390	-2.48835	0.02350
agec	0.0093907	0.0067864	1.38376	0.18433
agecsq	-0.0016652	0.0002886	-5.76971	0.00002

Variable	Odds Ratio	95% Confidence Interval Lower	Upper
Intercept			
rev_race.1	1.0566027	0.6486784	1.7210518
rev_race.2	1.8358966	1.1906365	2.8308525
rev_race.3	1.1227636	0.6956541	1.8121047
rev_race.4	0.4864101	0.2954261	0.8008594
rev_gender	0.6002210	0.3893554	0.9252866
agec	1.0094350	0.9950848	1.0239921
agecsq	0.9983362	0.9977285	0.9989443

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
Intercept	3.09978	-2.3201457	4.02716
rev_race.1	4.63375	0.2996712	444.27567
rev_race.2	4.40045	0.7027036	15.66510
rev_race.3	5.24927	0.2412641	108.35795
rev_race.4	2.81727	-0.4361920	-39.47689
rev_gender	15.96835	-0.5459504	6.95321
agec	14.56683	0.0144075	53.42207

"MI Method 2 without Design Vars, Logistic Regression for Table 12.5"

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
agecsq	8.23014	-0.0018157	9.03584

No FEFI Available in IVEware