

* Stata Analysis Examples Replication for ASDA 3rd Edition
* Berglund Fall 2024

*** CHAPTER 12

use "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes1112.dta", clear

keep if age >= 18 & WTMEC2YR > 0 & WTMEC2YR != .

* Table 12.2

codebook age riagendr marcat RIDRETH1 bmx bmi indfmpir BPXD11

gen agec = age - 46.36
gen agecsq = agec * agec

gen age4cat = 1 if age >= 18 & age <= 24
replace age4cat = 2 if age >= 25 & age <= 44
replace age4cat = 3 if age >= 45 & age <= 64
replace age4cat = 4 if age >= 65 & age != .

gen povcat = 1 if indfmpir >= 0 & indfmpir <= 0.99
replace povcat = 2 if indfmpir >= 1.00 & indfmpir <= 1.99
replace povcat = 3 if indfmpir >= 2.00 & indfmpir <= 2.99
replace povcat = 4 if indfmpir >= 3.00 & indfmpir <= 3.99
replace povcat = 5 if indfmpir >= 4.00 & indfmpir <= 4.99
replace povcat = 3 if indfmpir >= 5.00 & indfmpir != .

gen bmicat = 1 if bmx bmi < 18.5
replace bmicat = 2 if bmx bmi >= 18.5 & bmx bmi <= 24.9
replace bmicat = 3 if bmx bmi >= 25.0 & bmx bmi <= 29.9
replace bmicat = 4 if bmx bmi >= 30 & bmx bmi != .

gen dbpcat = 1 if BPXD11 < 80
replace dbpcat = 2 if BPXD11 >= 80 & BPXD11 <= 89.9
replace dbpcat = 3 if BPXD11 >= 90 & BPXD11 != .

gen descodes = sdmvstra*10+sdmvpsu

* CC analysis

gen high_diastolic = 0
replace high_diastolic = 1 if BPXD11 >= 90 & BPXD11 != .
replace high_diastolic = . if BPXD11 == .

svyset sdmvpsu [pweight=WTMEC2YR], strata(sdmvstra)
svy: prop high_diastolic

svy: logit high_diastolic i.RIDRETH1 i.riagendr agec agecsq

* Standard MI (include design variables)

use "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes1112.dta", clear

keep if age >= 18 & WTMEC2YR > 0 & WTMEC2YR != .

gen agec = age - 46.36
gen agecsq = agec * agec

gen age4cat = 1 if age >= 18 & age <= 24
replace age4cat = 2 if age >= 25 & age <= 44
replace age4cat = 3 if age >= 45 & age <= 64
replace age4cat = 4 if age >= 65 & age != .

gen povcat = 1 if indfmpir >= 0 & indfmpir <= 0.99
replace povcat = 2 if indfmpir >= 1.00 & indfmpir <= 1.99
replace povcat = 3 if indfmpir >= 2.00 & indfmpir <= 2.99
replace povcat = 4 if indfmpir >= 3.00 & indfmpir <= 3.99
replace povcat = 5 if indfmpir >= 4.00 & indfmpir <= 4.99

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replace povcat = 3 if indfmpir >= 5.00 & indfmpir != .

gen bmicat = 1 if bmx bmi < 18.5
replace bmicat = 2 if bmx bmi >= 18.5 & bmx bmi <= 24.9
replace bmicat = 3 if bmx bmi >= 25.0 & bmx bmi <= 29.9
replace bmicat = 4 if bmx bmi >= 30 & bmx bmi != .

gen dbpcat = 1 if BPXD11 < 80
replace dbpcat = 2 if BPXD11 >= 80 & BPXD11 <= 89.9
replace dbpcat = 3 if BPXD11 >= 90 & BPXD11 != .

gen descodes = sdmvstra*10+sdmvpsu

misstable patterns BPXD11 bmx bmi indfmpir ///
marcat riagendr RIDRETH1 agec agecsq WTMEC2YR descodes

* set output data set to "full long" style
mi set flong

mi register imputed marcat bmx bmi indfmpir BPXD11

mi register regular riagendr RIDRETH1 agec descodes WTMEC2YR

mi impute chained ///
(mlogit) marcat ///
(regress) bmx bmi ///
(regress, include(i.descodes WTMEC2YR)) BPXD11 ///
(regress) indfmpir = i.riagendr i.RIDRETH1 agec agecsq, ///
add(5) rseed(2024) replace

* values for Table 12.3 for _mi_m 0-5
mean bmx bmi indfmpir BPXD11 [pweight=WTMEC2YR], ///
over(_mi_m)

mi svyset sdmvpsu [pweight=WTMEC2YR], strata(sdmvstra)

* Estimation
* rename high diastolic for newly imputed data
gen high_diastolic = 0
replace high_diastolic = 1 if BPXD11 >= 90

mi svyset sdmvpsu [pweight=WTMEC2YR], strata(sdmvstra)

mi estimate: svy: prop high_diastolic

mi estimate: svy: logistic high_diastolic i.RIDRETH1 ///
i.riagendr agec agecsq

mi test 2.riagendr 2.RIDRETH1 3.RIDRETH1 ///
4.RIDRETH1 5.RIDRETH1

* Standard MI (exclude design variables)

use "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes1112.dta", clear

keep if age >= 18 & WTMEC2YR > 0 & WTMEC2YR != .

gen agec = age - 46.36
gen agecsq = agec * agec

gen age4cat = 1 if age >= 18 & age <= 24
replace age4cat = 2 if age >= 25 & age <= 44
replace age4cat = 3 if age >= 45 & age <= 64
replace age4cat = 4 if age >= 65 & age != .

gen povcat = 1 if indfmpir >= 0 & indfmpir <= 0.99
replace povcat = 2 if indfmpir >= 1.00 & indfmpir <= 1.99
replace povcat = 3 if indfmpir >= 2.00 & indfmpir <= 2.99
replace povcat = 4 if indfmpir >= 3.00 & indfmpir <= 3.99

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replace povcat = 5 if indfmpir >= 4.00 & indfmpir <= 4.99
replace povcat = 3 if indfmpir >= 5.00 & indfmpir != .

gen bmicat = 1 if bmx bmi < 18.5
replace bmicat = 2 if bmx bmi >= 18.5 & bmx bmi <= 24.9
replace bmicat = 3 if bmx bmi >= 25.0 & bmx bmi <= 29.9
replace bmicat = 4 if bmx bmi >= 30 & bmx bmi != .

gen dbpcat = 1 if BPXD11 < 80
replace dbpcat = 2 if BPXD11 >= 80 & BPXD11 <= 89.9
replace dbpcat = 3 if BPXD11 >= 90 & BPXD11 != .

gen descodes = sdmvstra*10+sdmvpsu

* set output data set to "full long" style
mi set flong

mi register imputed marcat bmx bmi indfmpir BPXD11
mi register regular riagendr RIDRETH1 agec descodes WTMEC2YR

mi impute chained ///
(mlogit) marcat ///
(regress) bmx bmi ///
(regress) BPXD11 ///
(regress) indfmpir = i.riagendr i.RIDRETH1 agec agecsq, ///
add(5) rseed(2024) replace

mean bmx bmi indfmpir BPXD11 [pweight=WTMEC2YR], ///
over(_mi_m)

mi svyset sdmvpsu [pweight=WTMEC2YR], strata(sdmvstra)

* Estimation

gen high_diastolic = 0
replace high_diastolic = 1 if BPXD11 >= 90

mi svyset sdmvpsu [pweight=WTMEC2YR], strata(sdmvstra)

mi estimate: svy: prop high_diastolic

mi estimate: svy: logistic high_diastolic i.RIDRETH1 ///
i.riagendr agec agecsq

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