

Supplementary Material

STATA code

**** Descriptive statistics ****

sum x, detail

tab x

table_1_mc (see link: <https://www.stata.com/new-in-stata/create-export-descriptive-statistic-tables/>)

dtable Age i.Gender i.moderatetoseveredepression i.Maritalstatus i.poverty i.obesity
i.Evertoldyouhadthyroidproble i.Vigorousrecreationalactivities, by(fibersup)

```
. dtable Age i.Gender i.moderatetoseveredepression i.Maritalstatus i.poverty i.obesity i.Evertoldyouhadthyroidproble i.Vigorousrecreati  
> onalactivities, by(fibersup)
```

	No	fibersup Yes	Total
N	2,968 (62.2%)	1,805 (37.8%)	4,773 (100.0%)
Age in years at screening	50.304 (17.578)	48.129 (19.511)	49.481 (18.361)
Gender			
male	1,436 (48.4%)	903 (50.0%)	2,339 (49.0%)
female	1,532 (51.6%)	902 (50.0%)	2,434 (51.0%)
moderatetoseveredepression			
Not Depressed	2,684 (90.4%)	1,664 (92.2%)	4,348 (91.1%)
Depressed	284 (9.6%)	141 (7.8%)	425 (8.9%)
Marital status			
Married	1,486 (51.9%)	789 (47.0%)	2,275 (50.1%)
Widowed	190 (6.6%)	141 (8.4%)	331 (7.3%)
Divorced	329 (11.5%)	193 (11.5%)	522 (11.5%)
Separated	110 (3.8%)	59 (3.5%)	169 (3.7%)
Never Married	470 (16.4%)	345 (20.6%)	815 (18.0%)
Living with a partner	276 (9.6%)	151 (9.0%)	427 (9.4%)
poverty			
Family income above federal poverty threshold	2,152 (81.0%)	1,244 (79.7%)	3,396 (80.5%)
Family income equal or less than federal poverty threshold	504 (19.0%)	317 (20.3%)	821 (19.5%)
obesity			
Not Obese	1,674 (56.9%)	1,065 (59.6%)	2,739 (57.9%)
Obese	1,269 (43.1%)	723 (40.4%)	1,992 (42.1%)
Ever told you had thyroid problem			
No	2,486 (87.0%)	1,501 (89.6%)	3,987 (88.0%)
Yes	371 (13.0%)	174 (10.4%)	545 (12.0%)
Vigorous recreational activities			
No	2,246 (75.7%)	1,317 (73.0%)	3,563 (74.6%)
Yes	722 (24.3%)	488 (27.0%)	1,210 (25.4%)

Modeling

* Unadjusted

logistic moderatetoseveredepression fibersup poverty

. logistic moderatetoseveredepression fibersup

Logistic regression

Number of obs = **4,773**

LR chi2(1) = **4.34**

Prob > chi2 = **0.0372**

Pseudo R2 = **0.0015**

Log likelihood = **-1431.242**

moderatetoseveredepression	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
fibersup	.8008109	.0862011	-2.06	0.039	.6484921	.9889066
_cons	.1058122	.0066026	-36.00	0.000	.0936313	.1195778

Note: **_cons** estimates baseline odds.

* Adjusted:

Primary Analysis

logistic moderatetoseveredepression fibersup poverty Evertoldyouhadthyroidproble
Atleastonecomorbidity obesity i.Gender Vigorousrecreationalactivities married_CAT oldage

**. logistic moderatetoseveredepression fibersup poverty Evertoldyouhadthyroidproble Atleastonecomorbidity obesity i.Gender Vigor
> ousrecreationalactivities married_CAT oldage**

Logistic regression

Number of obs = **3,979**

LR chi2(9) = **140.04**

Prob > chi2 = **0.0000**

Pseudo R2 = **0.0598**

Log likelihood = **-1100.8237**

moderatetoseveredepression	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
fibersup	.7508763	.0939822	-2.29	0.022	.5875288	.9596385
poverty	1.552291	.2048605	3.33	0.001	1.198499	2.010522
Evertoldyouhadthyroidproble	1.375571	.2213597	1.98	0.048	1.003473	1.885646
Atleastonecomorbidity	1.654133	.2349288	3.54	0.000	1.252213	2.185056
obesity	1.383705	.1620796	2.77	0.006	1.099862	1.740799
Gender						
female	1.259379	.152492	1.90	0.057	.9933189	1.596703
Vigorousrecreationalactivities	.4679498	.0813368	-4.37	0.000	.3328492	.6578866
married_CAT	.5265954	.0620964	-5.44	0.000	.4179294	.6635157
oldage	.6547683	.0853392	-3.25	0.001	.5071616	.8453352
_cons	.0907599	.0156194	-13.94	0.000	.0647748	.1271692

Note: **_cons** estimates baseline odds.

Secondary Analysis

logistic moderatetoseveredepression Dietaryfibergm poverty Evertoldyouhadthyroidproble
Atleastonecomorbidity obesity i.Gender Vigorousrecreationalactivities married_CAT oldage

```
. logistic moderatetoseveredepression Dietaryfibergm poverty Evertoldyouhadthyroidproble Atleastonecomorbidity obesity i.Gender
> Vigorousrecreationalactivities married_CAT oldage
```

```
Logistic regression                                Number of obs = 3,979
                                                    LR chi2(9)    = 149.88
                                                    Prob > chi2   = 0.0000
Log likelihood = -1095.903                        Pseudo R2    = 0.0640
```

moderatetoseveredepression	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
Dietaryfibergm	.877019	.0336654	-3.42	0.001	.813457	.9455476
poverty	1.552916	.2052336	3.33	0.001	1.198541	2.012069
Evertoldyouhadthyroidproble	1.381281	.2224138	2.01	0.045	1.007445	1.893836
Atleastonecomorbidity	1.652923	.2347406	3.54	0.000	1.251321	2.183416
obesity	1.386538	.1625096	2.79	0.005	1.101961	1.744604
Gender						
female	1.243119	.1506626	1.80	0.073	.980278	1.576434
Vigorousrecreationalactivities	.4700644	.0817607	-4.34	0.000	.3342747	.6610148
married_CAT	.5262817	.0620698	-5.44	0.000	.4176643	.6631462
oldage	.6562487	.0855463	-3.23	0.001	.5082868	.8472822
_cons	.0923677	.0155593	-14.14	0.000	.0663949	.1285005

Note: _cons estimates baseline odds.

* sensitivity analysis:

Primary Analysis

```
logistic moderatetoseveredepression fibersup poverty Evertoldyouhadthyroidproble
Atleastonecomorbidity obesity i.Gender Vigorousrecreationalactivities married_CAT oldage
```

Collinearity test of final model

vif, uncentered

Goodness of fit and AUC

estat gof

lroc

```
. vif , uncentered
```

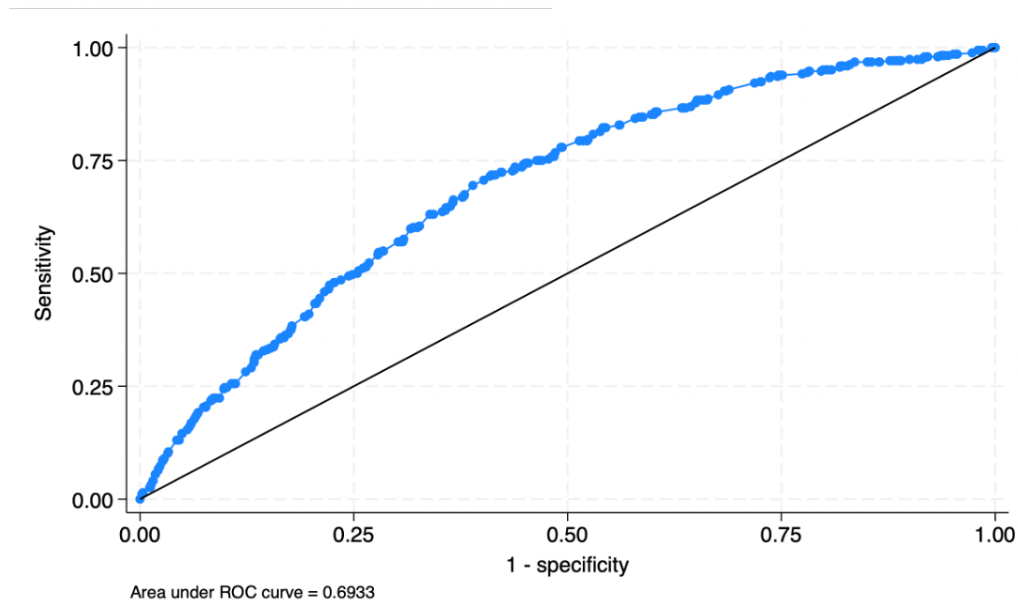
Variable	VIF	1/VIF
fibersup	1.43	0.697497
poverty	1.19	0.839236
Evertoldy~le	1.28	0.778586
Atleastone~y	2.95	0.338509
obesity	1.66	0.601656
1.Gender	1.82	0.549958
Vigorousre~s	1.22	0.820331
married_CAT	1.85	0.539605
oldage	1.85	0.539196
Mean VIF	1.70	

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. estat gof
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Goodness-of-fit test after logistic model

Variable: **moderatetoseveredepression**

```
Number of observations = 3,979
Number of covariate patterns = 310
Pearson chi2(300) = 311.59
Prob > chi2 = 0.3105
```



Secondary Analysis

Secondary analysis using fiber as a continuous variable

logistic moderatetoseveredepression Dietaryfibergm poverty Evertoldyouhadthyroidproble
Atleastonecomorbidity obesity i.Gender Vigorousrecreationalactivities married_CAT oldage

Sensitivity analysis of secondary model

```
estat gof
```

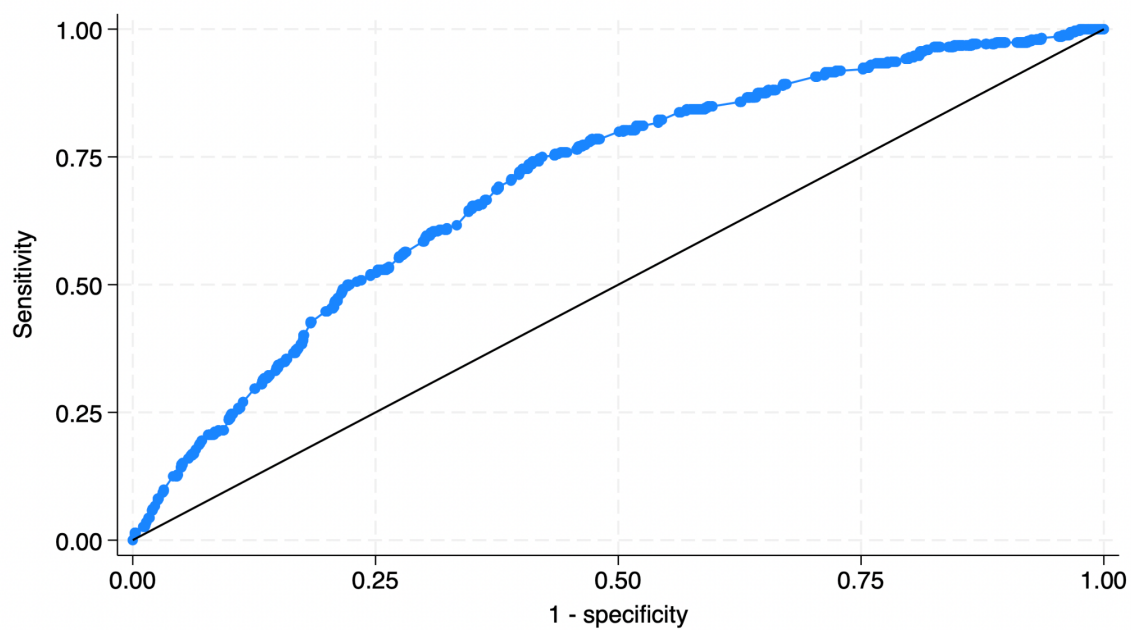
```
lroc
```

```
. estat gof
```

Goodness-of-fit test after logistic model

Variable: **moderatetoseveredepression**

```
Number of observations = 3,979
Number of covariate patterns = 1,369
Pearson chi2(1359) = 1402.67
Prob > chi2 = 0.2000
```



Area under ROC curve = 0.6992