# Supplemental Appendix to: Association of body mass index with health-related quality of life in the US by age and sex

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## Contents

# 1 Datasets

We used data from the Medical Expenditure Panel Survey (MEPS) 2008-2016. The following Full Year Consolidated Data Files were used:

| Year | File |
|---|---|
| 2008 | HC-121 |
| 2009 | HC-129 |
| 2010 | HC-138 |
| 2011 | HC-147 |
| 2012 | HC-155 |
| 2013 | HC-163 |
| 2014 | HC-171 |
| 2015 | HC-181 |
| 2016 | HC-192 |

Variable definitions for Race and Education were harmonized across survey years as needed.

## 1.1 Exclusion Criteria

The pooled dataset contained 194,067 adults (18+) with completed SF-6D(SF-12) items. We excluded women who reported being pregnant in any portion of the panel because of possible effects on weight, leaving 187,364 adults. We then excluded individuals with no reported BMI, leaving 182,778 adults in our final dataset.

## 1.2 Variable Coding and Standardization

Adults with no reported education level (Not ascertained/DK/Refused) (n=1,410) were pooled into one category and used as the reference group.

Categorical variables were replaced by dummy variables (0/1), and continuous variables were modeled as cubic polynomials for greater flexibility. Continuous variables were standardized to all have mean 0 and variance 1, and higher order terms (squared, cubed) were re-calculated from the standardized base.

## 1.3 Respondent Characteristics

Here we report the sample-weighted means/percentages of respondent characteristics among our sample of 182,778 respondents.

| Variable | Mean (SD) | Range |
|---|---|---|
| SF-6D: HRQoL [0-1] | 0.793 (0.148) | 0.345-1 |
| SF-6D: Physical Functioning [1-3] | 1.338 (0.632) | 1-3 |
| SF-6D: Role Limitations [1-4] | 2.05 (1.231) | 1-4 |
| SF-6D: Social Functioning [1-5] | 1.626 (1.018) | 1-5 |
| SF-6D: Pain [1-5] | 1.8 (1.101) | 1-5 |
| SF-6D: Mental Health [1-5] | 1.797 (0.954) | 1-5 |
| SF-6D: Vitality [1-5] | 2.506 (0.994) | 1-5 |
| BMI (self-reported) | 27.93 (6.37) | 7-282.4 |
| Year | 2012.04 (2.57) | 2008-2016 |
| Age | 47.62 (17.79) | 18-85 |
| Male (%) | 49.67 | |
| Smoker (%) | 17.06 | |
| Poverty Level | 413.18 (342.99) | -1638.98-3871.14 |
| Region (%) | | |

| Variable | Mean (SD) | Range |
|---|---|---|
| Northeast | 17.78 | |
| Midwest | 21.74 | |
| South | 37.43 | |
| West | 23.05 | |
| Race/Ethnicity (%) | | |
| White | 80.44 | |
| Black | 11.64 | |
| American Indian/Alaska Native | 0.75 | |
| Asian | 5.06 | |
| Native Hawaiian/Pacific Islander | 0.3 | |
| Multiple Races | 1.82 | |
| Hispanic | 14.14 | |
| Marital Status (%) | | |
| Married | 52.84 | |
| Widowed | 6.37 | |
| Divorced | 11.94 | |
| Separated | 2.2 | |
| Never Married | 26.65 | |
| Education (%) | | |
| Less than High School | 4.24 | |
| Some High School | 9.21 | |
| GED or High School Diploma | 29.65 | |
| Some College | 27.52 | |
| College Graduate | 18.44 | |
| Graduate School | 10.45 | |
| Unknown | 0.5 | |

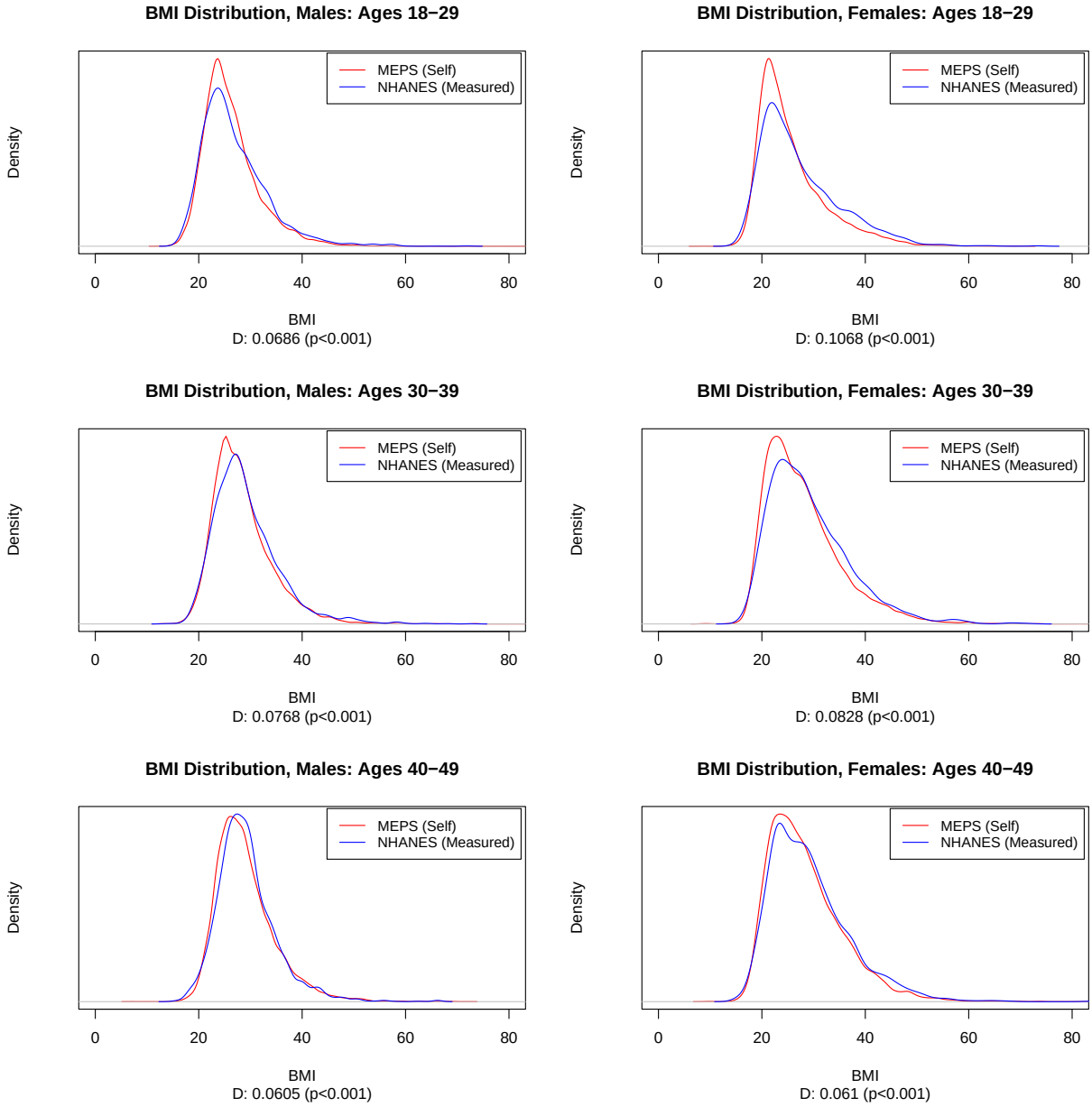
| BMI (Self-Reported) | Frequency (#) | Percentage (weighted) |
|---|---|---|
| <18.5 | 2964 | 1.65% |
| 18.5-<25 | 57898 | 33.34% |
| 25-<30 | 63072 | 34.35% |
| 30-<35 | 34753 | 18.19% |
| 35-<40 | 14656 | 7.66% |
| 40-<50 | 7987 | 4.09% |
| 50-<60 | 1186 | 0.59% |
| 60-<70 | 202 | 0.1% |
| 70-<80 | 41 | 0.02% |
| 80+ | 19 | 0.01% |

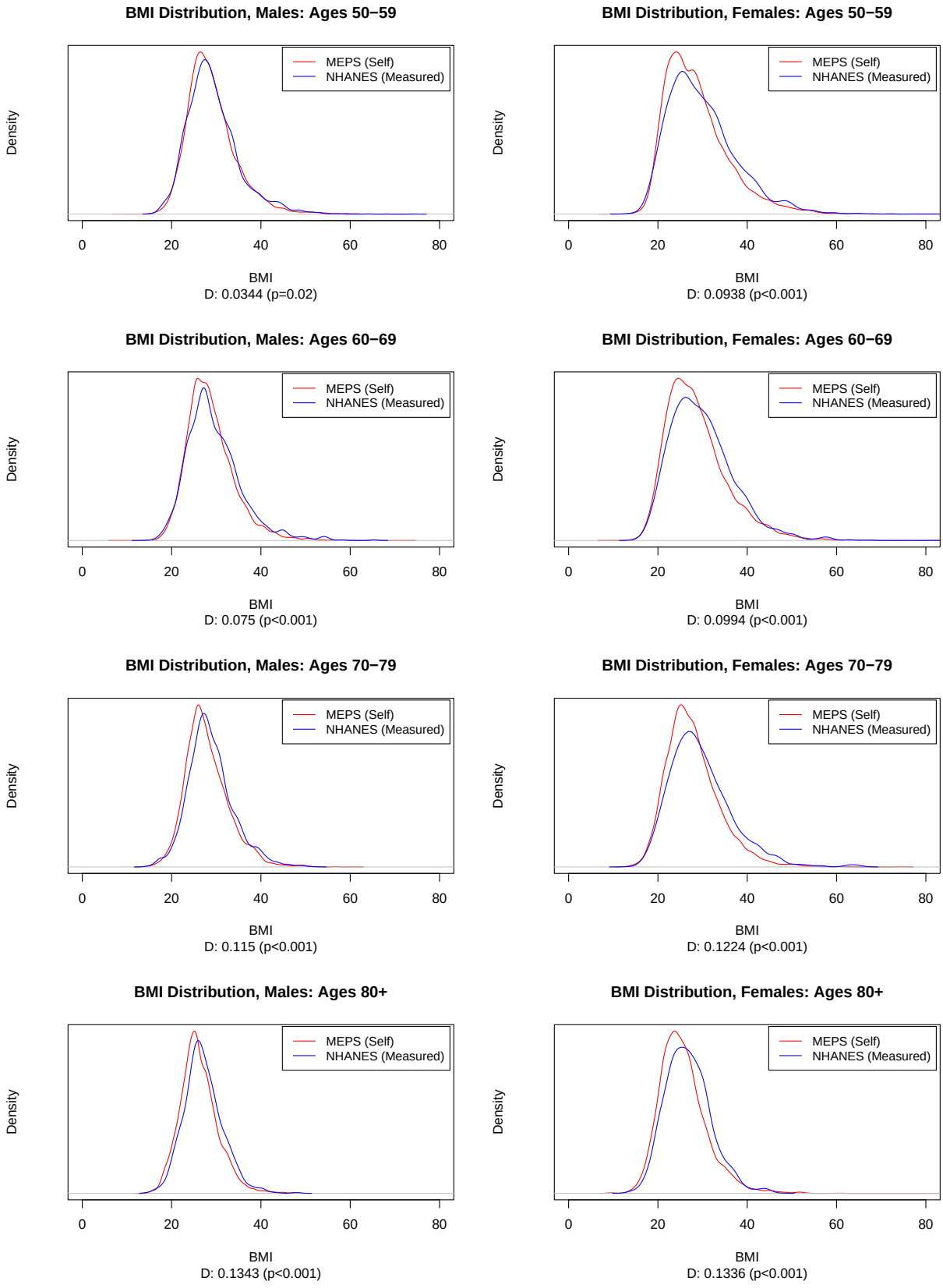
## 2 Adjustment For Self-Report Bias

It is well-documented that self-reported BMI tends to underestimate adult obesity prevalence. Thus, reported BMI in MEPS needs to be adjusted for self-report bias. Using the bias-correction approach described in Ward 2019, 2022, we adjusted the entire distribution of self-reported BMI in MEPS to be consistent with the distribution of measured BMI in NHANES, which is the gold standard of population-representative body measures in the US.

We pooled NHANES data from 2007-2016 which contained 30,724 adults age 18+. We removed pregnant adult women (n=317) and those without measured BMI (n=1,518), leaving 28,889 adults in our final dataset.

Here we compare the distribution of MEPS self-reported BMI with NHANES measured BMI by age group. We see significant under-reporting of BMI for both Males and Females, as characterized by the two-sample Kolmogorov-Smirnov D-statistic which is a metric for the distance between two distributions.

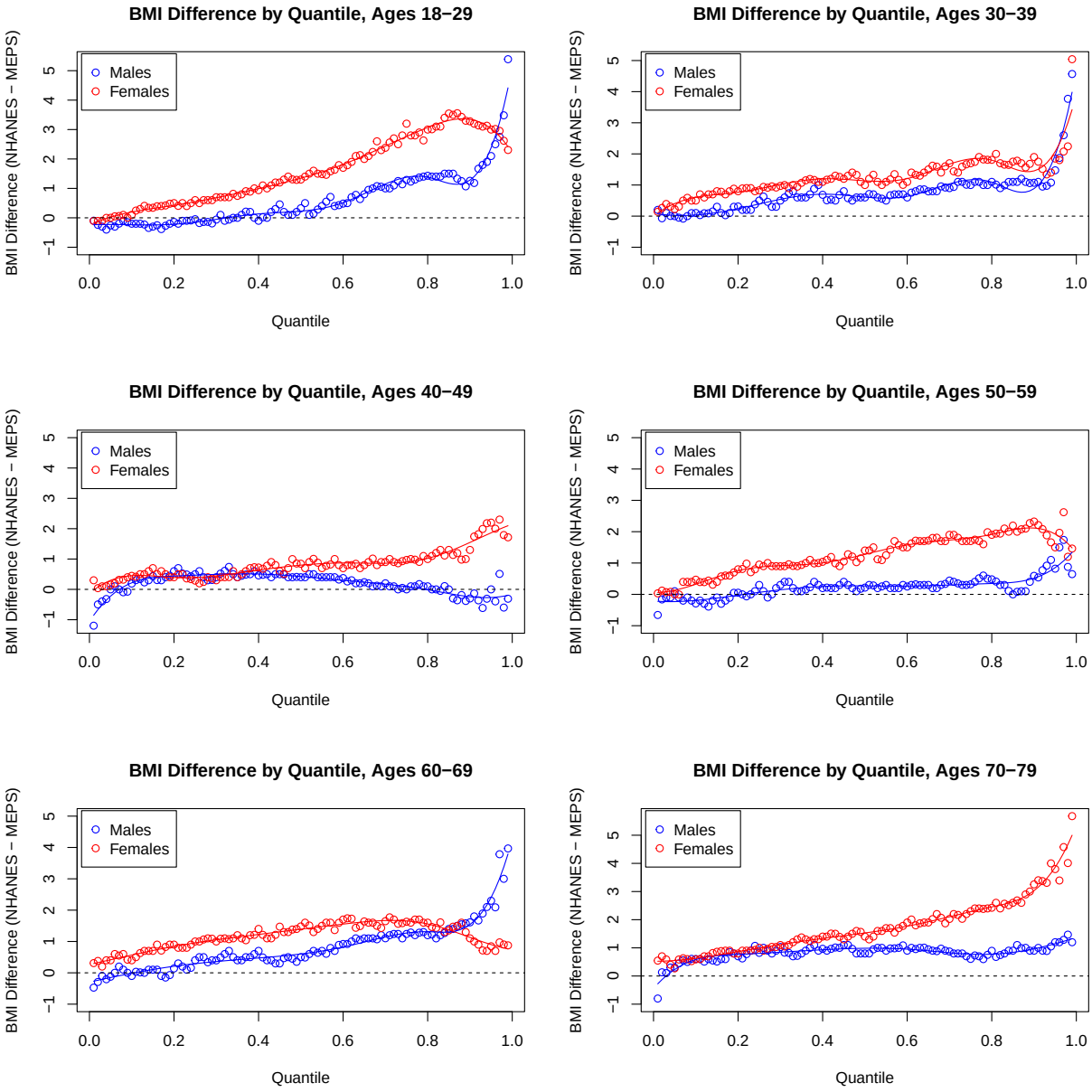


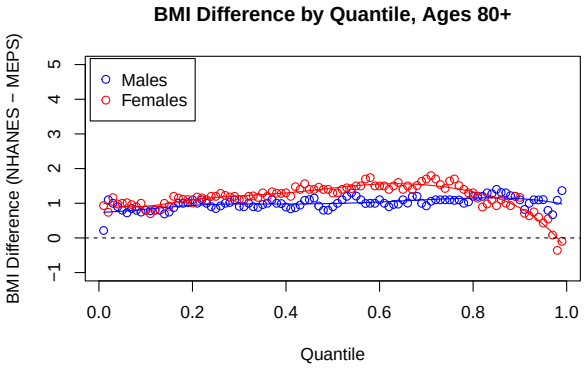



To map the distribution of self-reported BMI onto the measured NHANES distribution we estimated the

(sample-weighted) quantiles (0.01-0.99) of each distribution by sex and age group. We then calculated the difference between the measured and self-reported values of BMI at each quantile and fit cubic splines with knots at each quintile to these points.

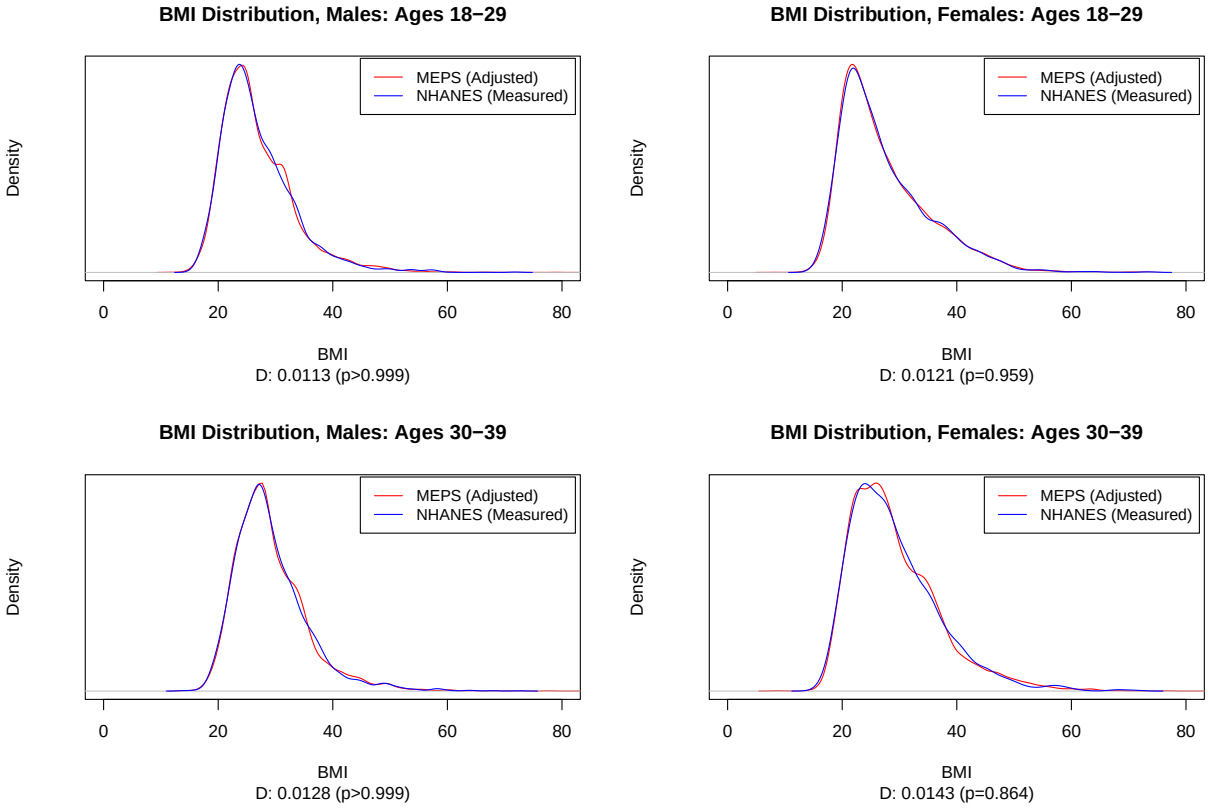
We see that self-report bias tends to increase with BMI quantile in adults.

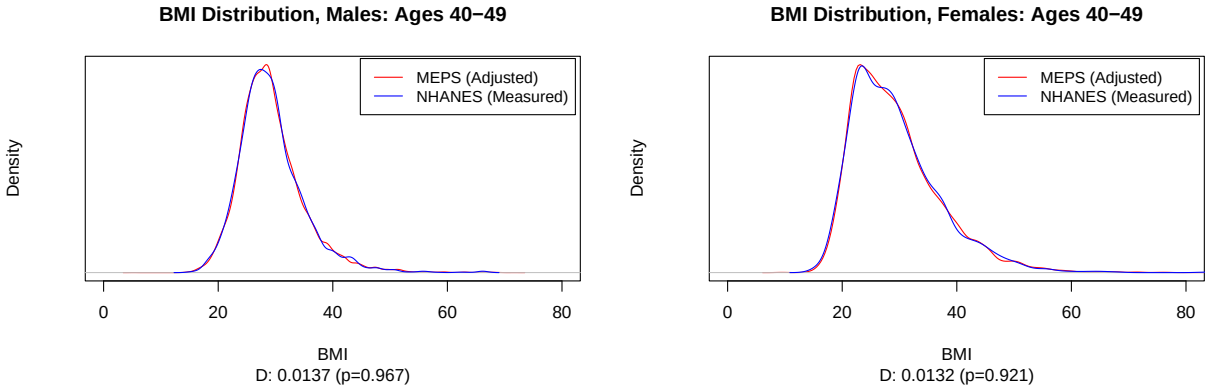




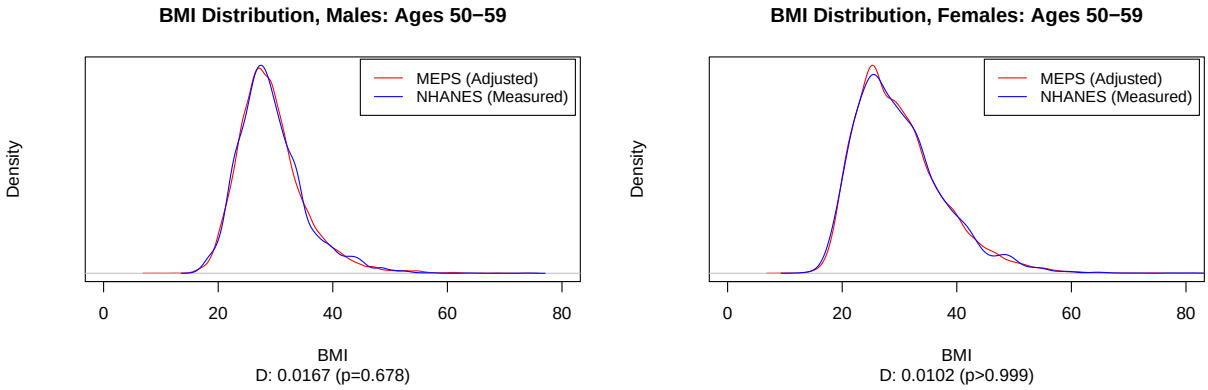

We then calculated the (sample-weighted) quantile of self-reported BMI for each respondent in MEPS and predicted their BMI difference using the fitted cubic splines. We used this predicted difference to adjust their self-reported BMI. While this approach adjusts for systematic self-report bias, it does not address rounding error that comes from reporting height/weight in discrete, rounded units. To smooth this rounding error we also perturbed BMI by adding normally-distributed noise with mean zero and standard deviation 0.5.

We see that the distributions of adjusted BMI are now statistically similar ($p>0.05$) to the measured distributions from NHANES. This also ensures that the prevalence estimates of BMI categories are similar.

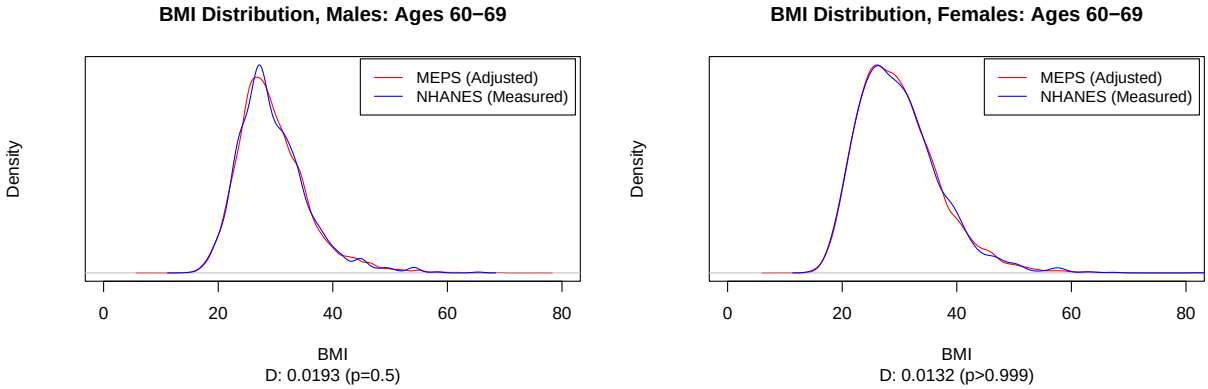



BMI Distribution, Males: Ages 40−49
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0137 (p=0.967)

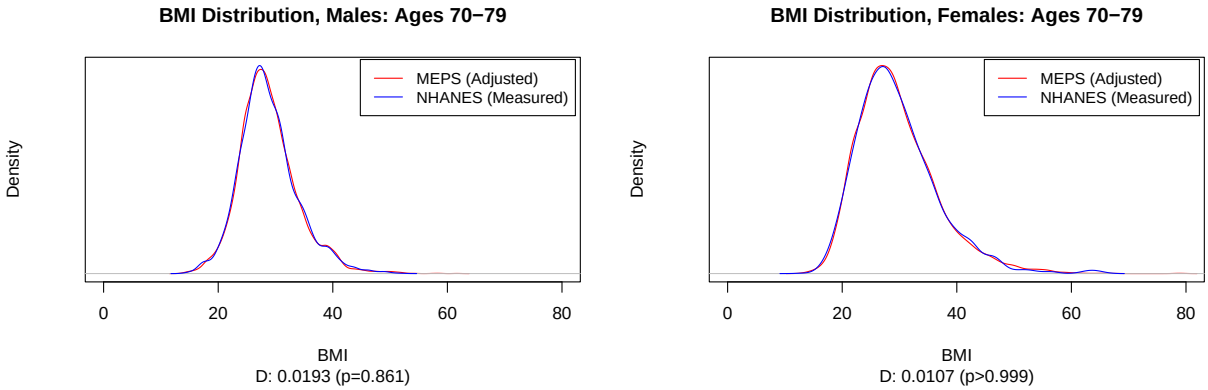

BMI Distribution, Females: Ages 40−49
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0132 (p=0.921)


BMI Distribution, Males: Ages 50−59
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0167 (p=0.678)

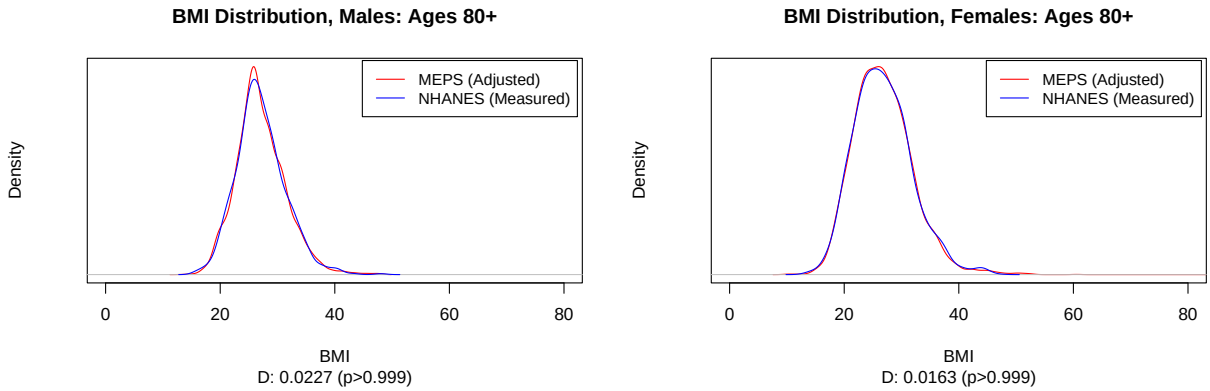

BMI Distribution, Females: Ages 50−59
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0102 (p>0.999)


BMI Distribution, Males: Ages 60−69
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0193 (p=0.5)


BMI Distribution, Females: Ages 60−69
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0132 (p>0.999)


BMI Distribution, Males: Ages 70−79
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0193 (p=0.861)


BMI Distribution, Females: Ages 70−79
MEPS (Adjusted)
NHANES (Measured)
Density
0
20
40
60
80
BMI
D: 0.0107 (p>0.999)




References:

Ward ZJ, Bleich SN, Cradock AL, Barrett JL, Giles CM, Flax C, et al. Projected US state-level prevalence of adult obesity and severe obesity. N Engl J Med. 2019;381(25):2440-2450.

Ward ZJ, Gortmaker SL. A rigorous evaluation of a method to adjust BMI for self-report bias. Obesity (Silver Spring). 2022 Feb;30(2):284-285.

# 3 SF-6D(SF-12) Domains

The SF-12 is a commonly used, multidimensional measure of patient-reported health-related quality of life. It was revised into a 6-dimensional health state classification (SF-6D), and utilities (bounded by 0 and 1) were elicited for a set of health states using the standard gamble technique (Brazier 2004). A model was then estimated to predict utility values for all SF-6D health states (Brazier 2004). Utilities for each patient are estimated based on responses across the 6 domains, summarized below based on Brazier 2004:

**Physical Functioning**
1. Your health does not limit you in moderate activities
2. Your health limits you a little in moderate activities
3. Your health limits you a lot in moderate activities

**Role Limitations**
1. You have no problems with your work or other regular daily activities as a result of your physical health or any emotional problems
2. You are limited in the kind of work or other activities as a result of your physical health
3. You accomplish less than you would like as a result of emotional problems
4. You are limited in the kind of work or other activities as a result of your physical health and accomplish less than you would like as a result of emotional problems

**Social Functioning**
1. Your health limits your social activities none of the time
2. Your health limits your social activities a little of the time
3. Your health limits your social activities some of the time
4. Your health limits your social activities most of the time
5. Your health limits your social activities all of the time

**Pain**
1. You have pain that does not interfere with your normal work (both outside the home and housework) at all
2. You have pain that interferes with your normal work (both outside the home and housework) a little bit
3. You have pain that interferes with your normal work (both outside the home and housework) moderately
4. You have pain that interferes with your normal work (both outside the home and housework) quite a bit
5. You have pain that interferes with your normal work (both outside the home and housework) extremely

**Mental Health**
1. You feel downhearted and low none of the time
2. You feel downhearted and low a little of the time
3. You feel downhearted and low most of the time
4. You feel downhearted and low all of the time

**Vitality**
1. You have a lot of energy all of the time
2. You have a lot of energy most of the time
3. You have a lot of energy some of the time
4. You have a lot of energy a little of the time
5. You have a lot of energy none of the time

References:

Brazier JE, Roberts J. The estimation of a preference-based measure of health from the SF-12. Med Care. 2004 Sep;42(9):851-9.

# 4 HRQoL Standardization

There are factors which may influence both BMI and health-related quality of life, such as smoking or poverty level. Thus to estimate the relationship between BMI itself and HRQoL we need to control for these other factors. Here we estimate the influence of these other factors on HRQoL and create a 'standardized' population in which the effect of these identified factors has been removed, thus allowing us to directly estimate the effect of BMI on HRQoL. Separate models were fit for each subgroup. As an illustration we report here the regression coefficients and 95% CIs Overall and by sex.

| Variable | Overall (95% CI) | Males (95% CI) | Females (95% CI) |
|---|---|---|---|
| (Intercept) | 0.7902 (0.7769 - 0.8065) | 0.828 (0.8094 - 0.8481) | 0.7762 (0.7585 - 0.7969) |
| BMI * | -0.0155 (-0.0168 - -0.0138) | -0.0118 (-0.014 - -0.0088) | -0.0179 (-0.0196 - -0.0165) |
| BMIˆ2 * | -0.0034 (-0.0063 - -0.0023) | -0.0046 (-0.0116 - -0.0029) | -0.003 (-0.0053 - -0.0021) |
| BMIˆ3 * | 2e-04 (1e-04 - 6e-04) | 2e-04 (1e-04 - 0.0016) | 2e-04 (2e-04 - 7e-04) |
| Year * | 0.0091 (0.0066 - 0.0116) | 0.0081 (0.0048 - 0.0117) | 0.0102 (0.007 - 0.0134) |
| Yearˆ2 * | 0.0012 (2e-04 - 0.0022) | 0.0012 (0 - 0.0026) | 0.0011 (-1e-04 - 0.0025) |
| Yearˆ3 * | -0.0017 (-0.0029 - -5e-04) | -0.0014 (-0.003 - 2e-04) | -0.002 (-0.0035 - -5e-04) |
| Region: Northeast (Ref) | — | — | — |
| Region: Midwest | -0.0027 (-0.0067 - 0.0019) | -0.0061 (-0.0116 - -7e-04) | 5e-04 (-0.0039 - 0.0055) |
| Region: South | -0.0038 (-0.0072 - 1e-04) | -0.0039 (-0.0084 - 9e-04) | -0.004 (-0.0081 - 7e-04) |
| Region: West | -0.013 (-0.017 - -0.0089) | -0.0132 (-0.0186 - -0.0078) | -0.0131 (-0.017 - -0.0086) |
| Age * | -0.0261 (-0.0285 - -0.0237) | -0.0317 (-0.0351 - -0.0285) | -0.0198 (-0.0228 - -0.0167) |
| Ageˆ2 * | 0.0031 (0.002 - 0.0046) | 0.0035 (0.0019 - 0.0055) | 0.003 (0.0012 - 0.005) |
| Ageˆ3 * | -0.0038 (-0.0048 - -0.0029) | -0.0039 (-0.0054 - -0.0027) | -0.0041 (-0.0054 - -0.0028) |
| Male | 0.0268 (0.0246 - 0.0287) | 0 (0 - 0) | 0 (0 - 0) |
| Race: White (Ref) | — | — | — |
| Race: Black | 0.0225 (0.0195 - 0.0254) | 0.0236 (0.02 - 0.0273) | 0.0217 (0.0176 - 0.0259) |
| Race: AIAN | -0.0132 (-0.0246 - -5e-04) | -0.0104 (-0.0271 - 0.0125) | -0.0157 (-0.0355 - -0.0022) |
| Race: Asian | 0.0091 (0.0044 - 0.0133) | 0.0099 (0.0051 - 0.0152) | 0.0082 (0.0022 - 0.0132) |
| Race: NH/PI | 0.0215 (0.0051 - 0.0363) | 0.027 (0.0065 - 0.0459) | 0.0157 (-0.0058 - 0.0338) |
| Race: Multi | -0.0099 (-0.0188 - -0.0021) | -0.0045 (-0.0155 - 0.0062) | -0.0152 (-0.0278 - -0.0027) |
| Hispanic | 0.028 (0.0243 - 0.0317) | 0.0301 (0.0254 - 0.0343) | 0.0253 (0.021 - 0.0297) |
| Marital: Married (Ref) | — | — | — |
| Marital: Widowed | -0.0132 (-0.0187 - -0.0081) | -0.0114 (-0.0219 - -0.0011) | -0.0186 (-0.0241 - -0.0128) |
| Marital: Divorced | -0.0225 (-0.0261 - -0.0189) | -0.0202 (-0.025 - -0.0152) | -0.0248 (-0.0291 - -0.0201) |
| Marital: Separated | -0.0374 (-0.0436 - -0.0305) | -0.0387 (-0.0486 - -0.0288) | -0.0356 (-0.0437 - -0.0268) |
| Marital: Never Married | -0.018 (-0.0212 - -0.0146) | -0.0237 (-0.0274 - -0.0198) | -0.0123 (-0.0169 - -0.0074) |
| Education: Unknown (Ref) | — | — | — |
| Education: <=8th grade | -0.014 (-0.0278 - -7e-04) | -0.0148 (-0.0321 - 0.0026) | -0.0096 (-0.0315 - 0.0088) |
| Education: HS, no diploma | -0.0039 (-0.0188 - 0.0089) | -0.014 (-0.0316 - 0.0048) | 0.0091 (-0.0115 - 0.0266) |

| Variable | Overall (95% CI) | Males (95% CI) | Females (95% CI) |
|---|---|---|---|
| Education: GED or diploma | 0.0092 (-0.0049 - 0.022) | -9e-04 (-0.0182 - 0.016) | 0.0223 (0.0025 - 0.0396) |
| Education: Some College | 0.0088 (-0.0057 - 0.0215) | -0.0022 (-0.0199 - 0.0149) | 0.0234 (0.0026 - 0.0411) |
| Education: 4-yr College | 0.0119 (-0.0026 - 0.025) | 9e-04 (-0.0162 - 0.0174) | 0.0269 (0.0061 - 0.0451) |
| Education: Graduate School | 0.0128 (-8e-04 - 0.0254) | 0.0054 (-0.012 - 0.0217) | 0.025 (0.0042 - 0.0427) |
| Smoker | -0.0416 (-0.0444 - -0.0386) | -0.036 (-0.0397 - -0.0319) | -0.0483 (-0.0525 - -0.0439) |
| Poverty Level * | 0.0352 (0.0332 - 0.0371) | 0.0357 (0.0328 - 0.0385) | 0.0338 (0.0315 - 0.0362) |
| Poverty Levelˆ2 * | -0.0116 (-0.0132 - -0.0102) | -0.0115 (-0.014 - -0.0097) | -0.0116 (-0.0132 - -0.0101) |
| Poverty Levelˆ3 * | 0.001 (9e-04 - 0.0013) | 0.001 (8e-04 - 0.0013) | 0.0011 (9e-04 - 0.0013) |

* indicates that the variable has been standardized (i.e. mean=0, sd=1)

Using this model, we adjusted respondents' HRQoL according to their distance from the synthetic, average person. (Higher order terms (square/cubic) were calculated from the mean base value. For example, the mean value for the age-squared term was calculated as $(a\bar{g}e)^2$ instead of $a\bar{g}e^2$).

Each person's HRQoL was then adjusted by their distance from the mean of each variable using the relevant coefficients. We adjusted for all variables except BMI (and age when fitting the bivariate prediction model), thus controlling for other salient factors.

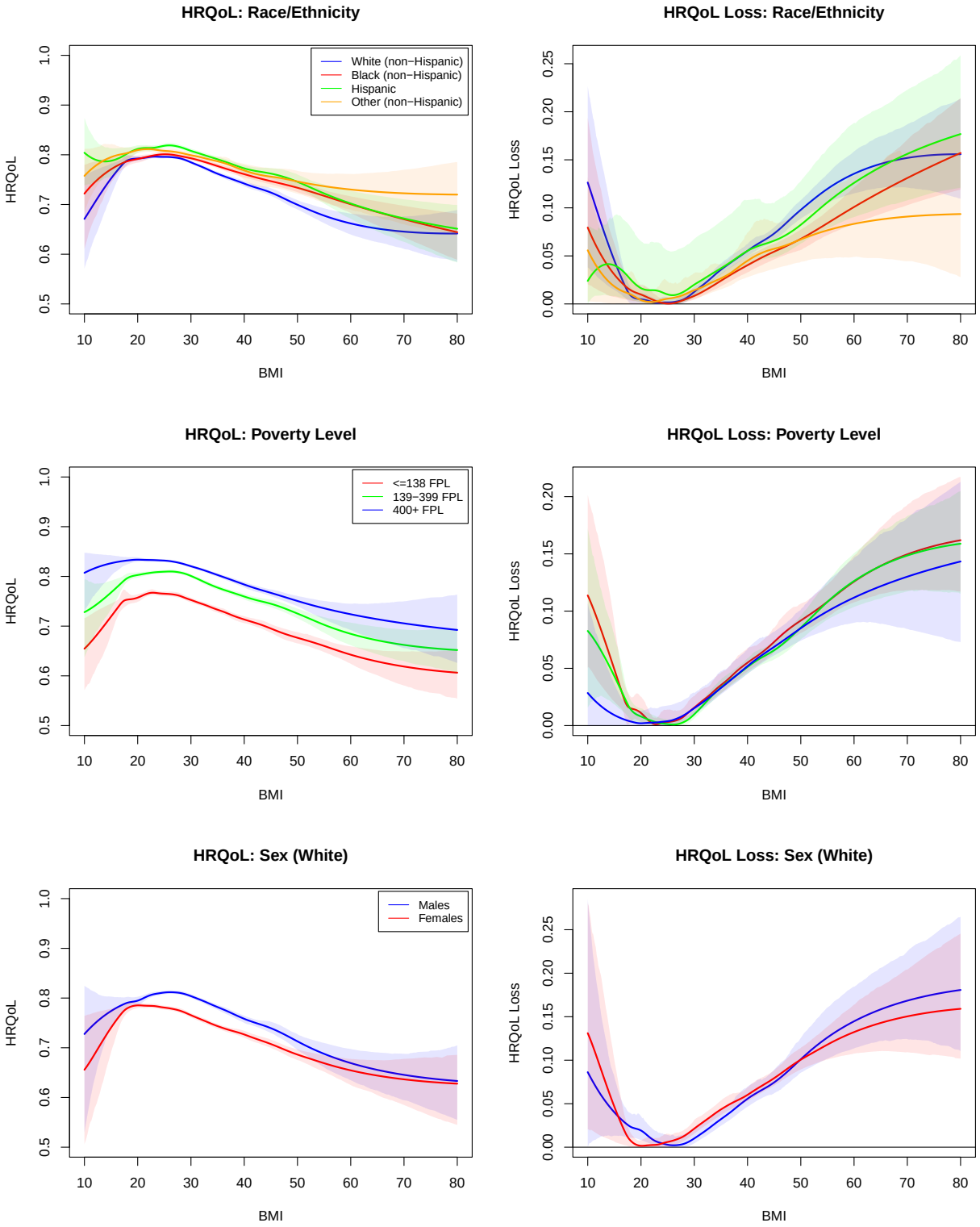
# 5 Bivariate GAM

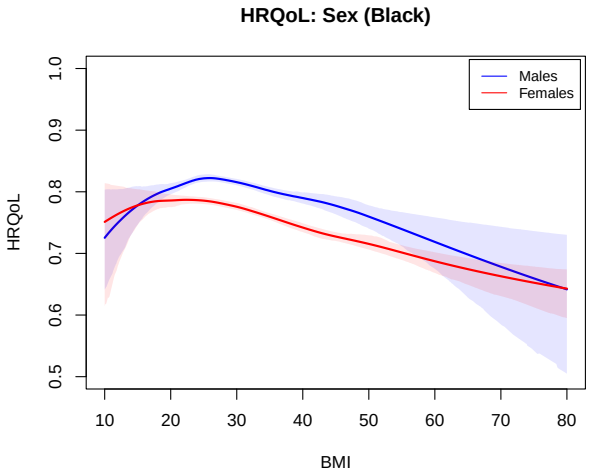
We used the `gam` command in the `mgcv` R package (version 1.8-12) which fits a GAM using a quadratically penalized likelihood approach while also estimating the degree of smoothness via cross-validation. We did not standardize HRQoL for age when fitting the bivariate model as this would have removed the variation in this dimension.

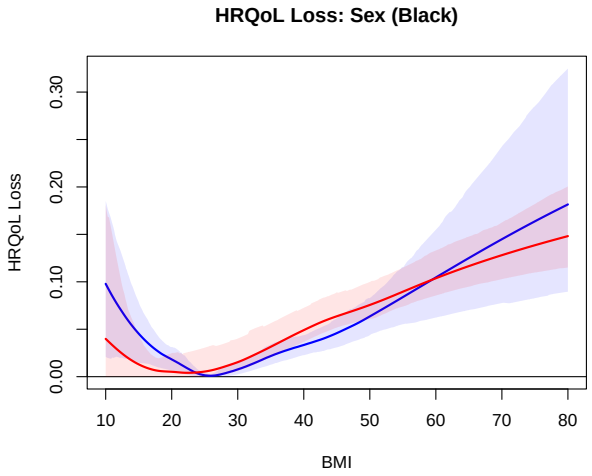
We fit a GAM with tensor product smooths which have one penalty per marginal basis (i.e., different penalties for age and BMI), allowing the degree of smoothness to vary by dimension. This allowed us to fit a smooth surface of predicted HRQoL while estimating the interaction of BMI and age in a non-parametric way.

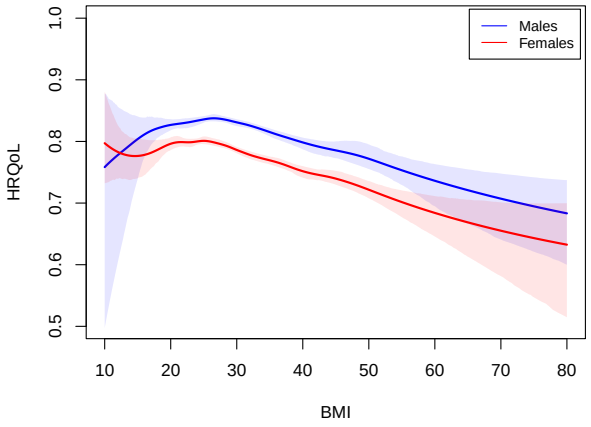
# 6 Results

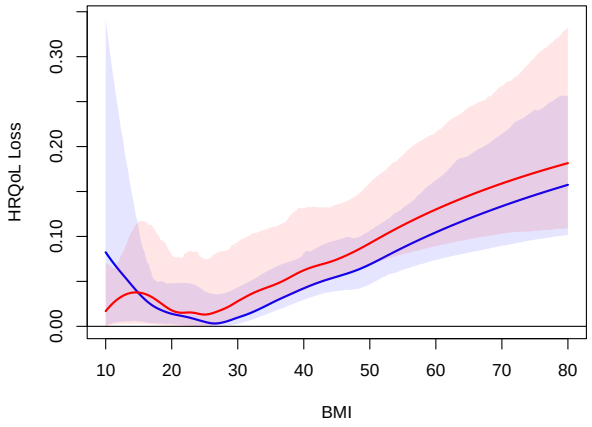
## 6.1 BMI-Related HRQoL and HRQoL Loss by Subgroup

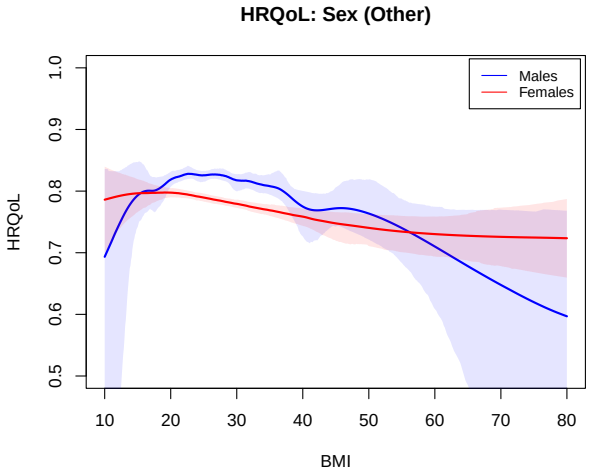


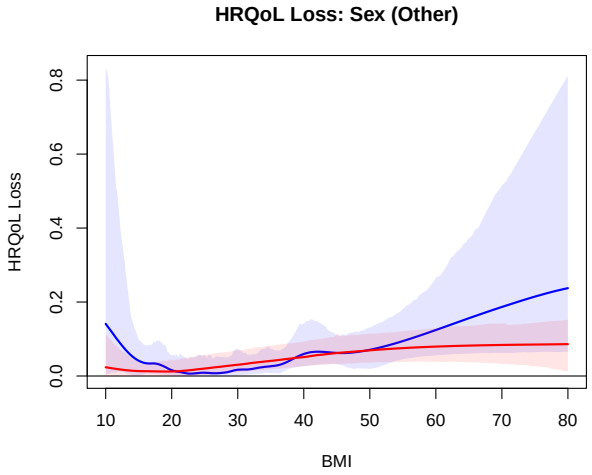

HRQoL: Sex (Black)
Males
Females
HRQoL
BMI

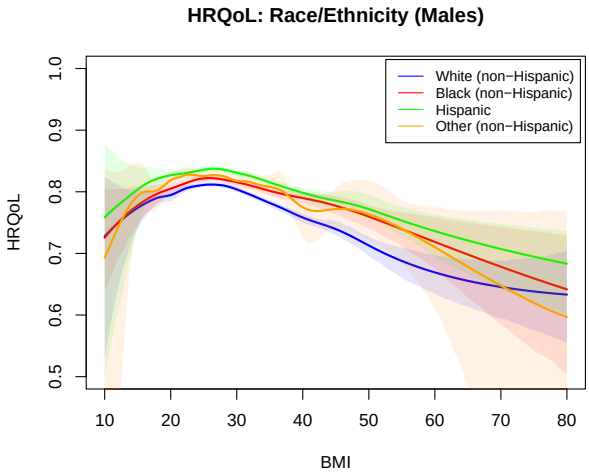

HRQoL Loss: Sex (Black)
HRQoL Loss
BMI

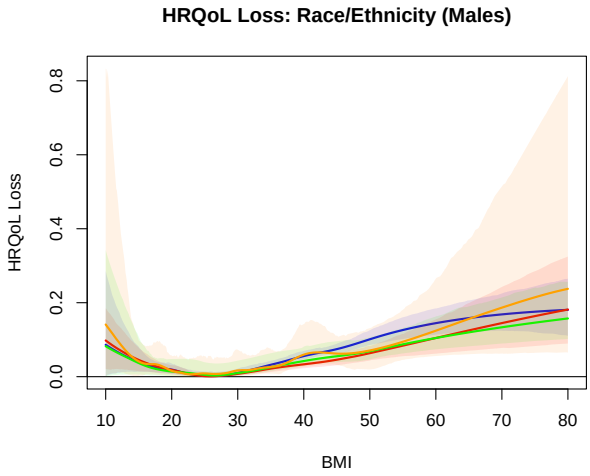

HRQoL: Sex (Hispanic)
Males
Females
HRQoL
BMI

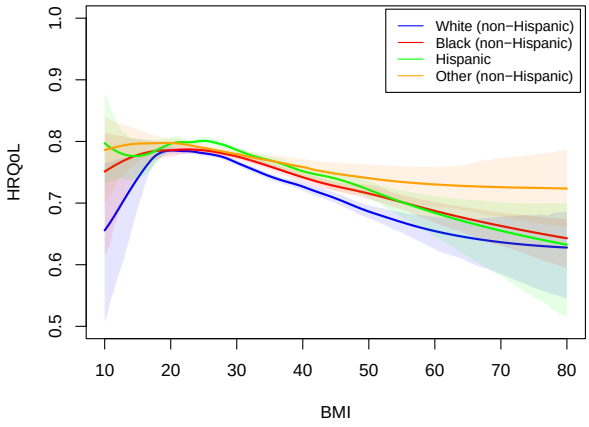

HRQoL Loss: Sex (Hispanic)
HRQoL Loss
BMI

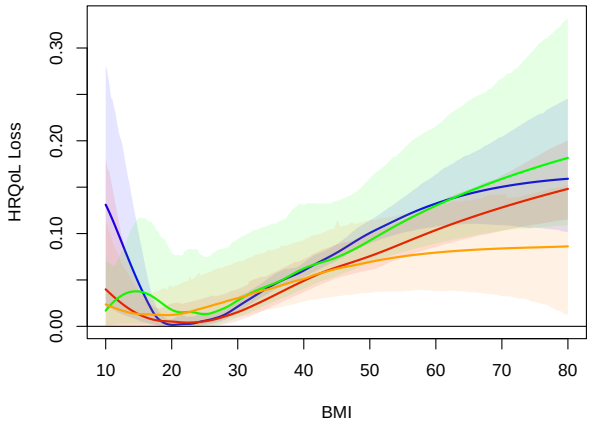

HRQoL: Sex (Other)
Males
Females
HRQoL
BMI

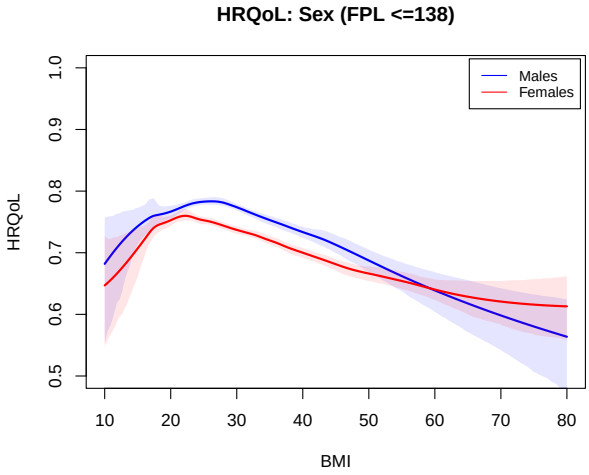

HRQoL Loss: Sex (Other)
HRQoL Loss
BMI

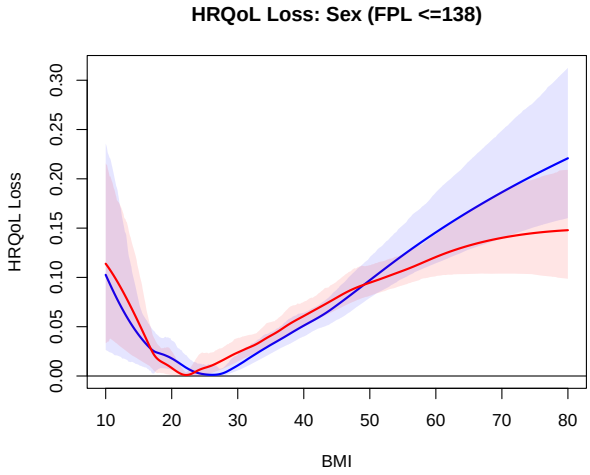

HRQoL: Race/Ethnicity (Males)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL
BMI

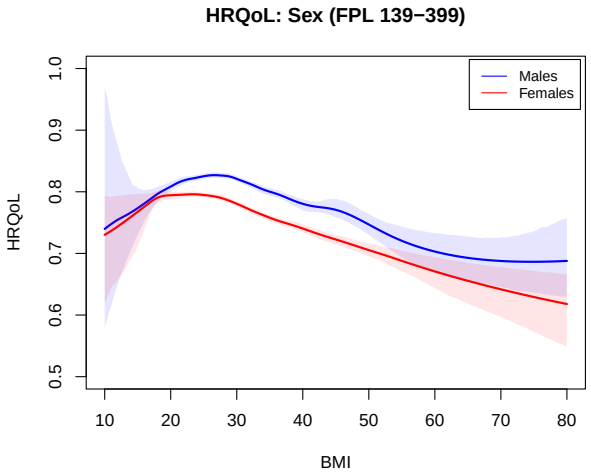

HRQoL Loss: Race/Ethnicity (Males)
HRQoL Loss
BMI

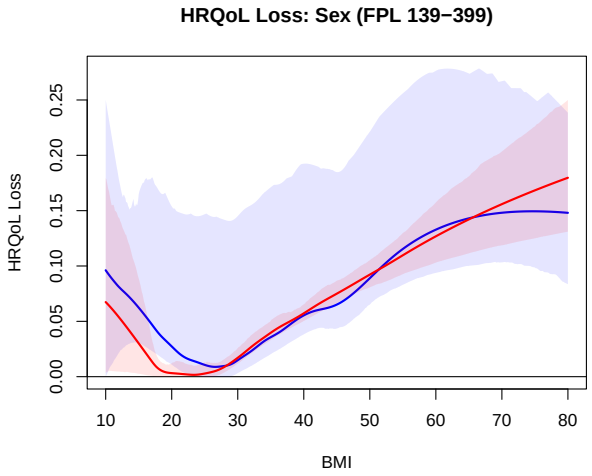

HRQoL: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL
BMI

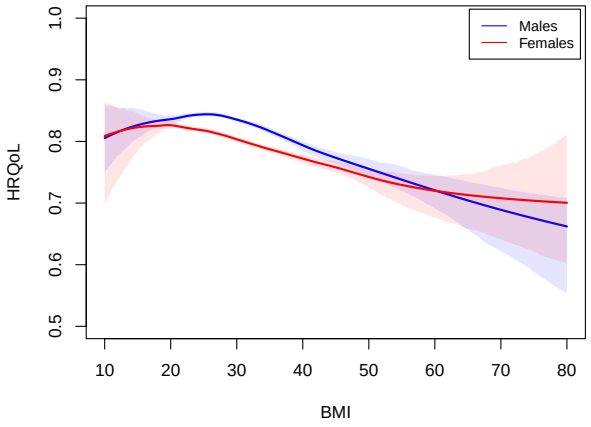

HRQoL Loss: Race/Ethnicity (Females)
HRQoL Loss
BMI

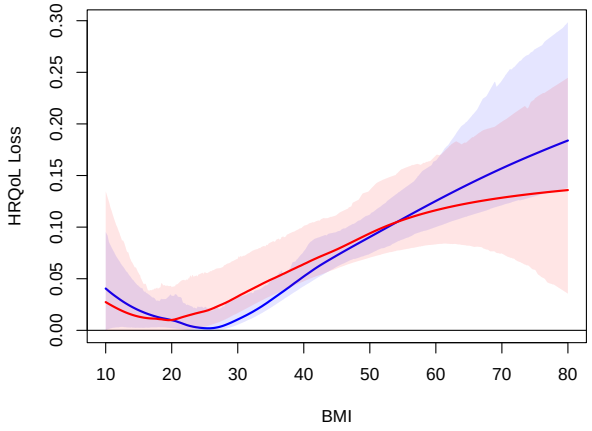

HRQoL: Sex (FPL <=138)
Males
Females
HRQoL
BMI

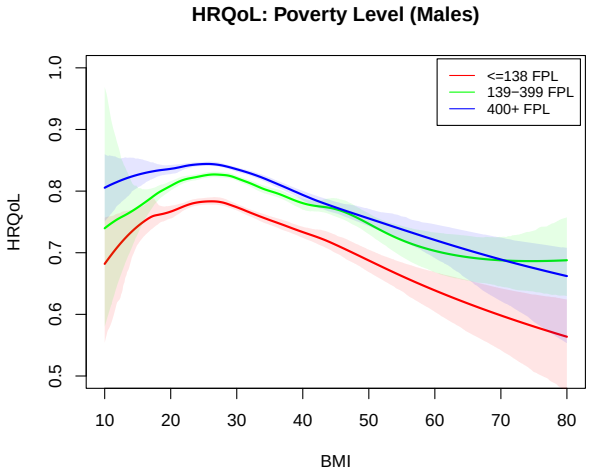

HRQoL Loss: Sex (FPL <=138)
HRQoL Loss
BMI

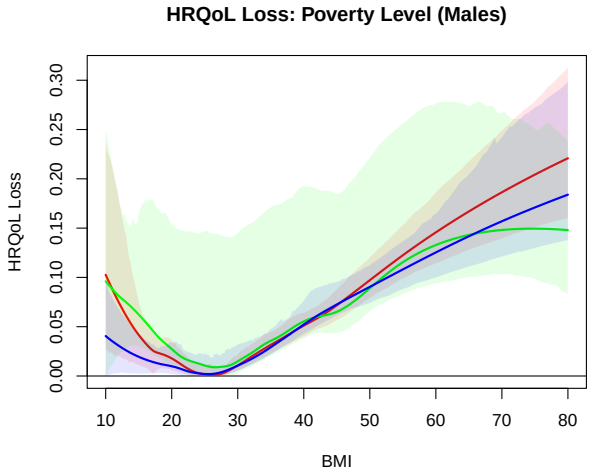

HRQoL: Sex (FPL 139−399)
Males
Females
HRQoL
BMI

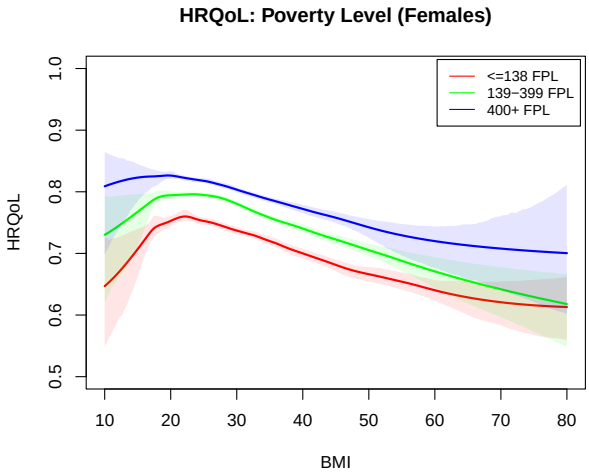

HRQoL Loss: Sex (FPL 139−399)
HRQoL Loss
BMI

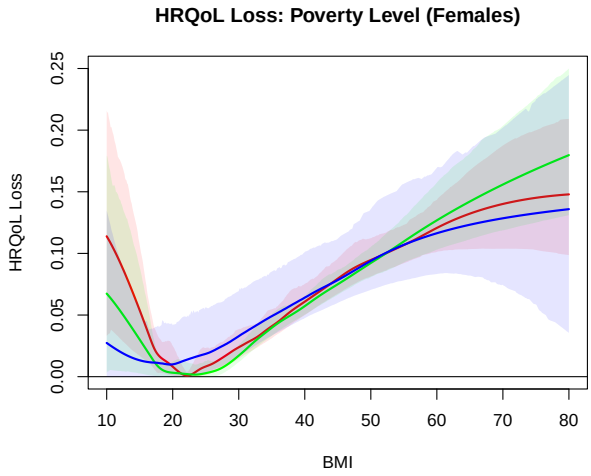

HRQoL: Sex (FPL 400+)
Males
Females
HRQoL
BMI

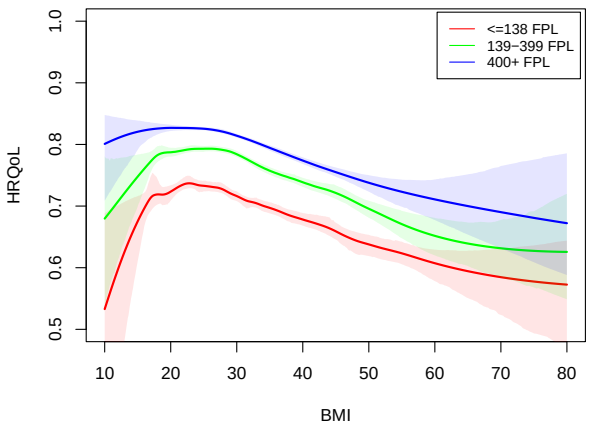

HRQoL Loss: Sex (FPL 400+)
HRQoL Loss
BMI

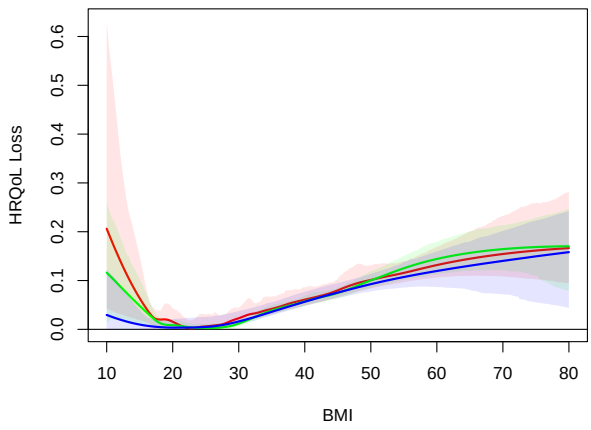

HRQoL: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

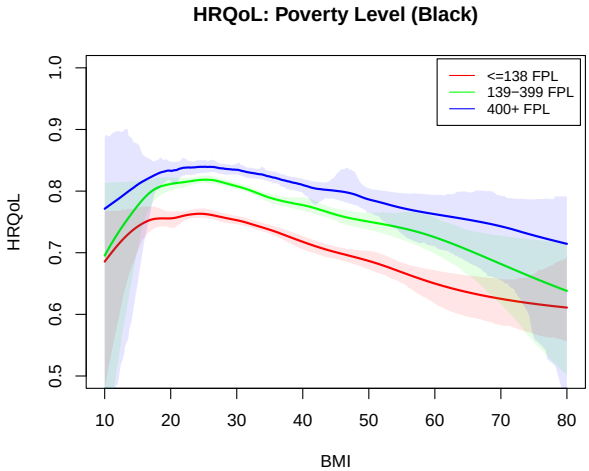

HRQoL Loss: Poverty Level (Males)
HRQoL Loss
BMI

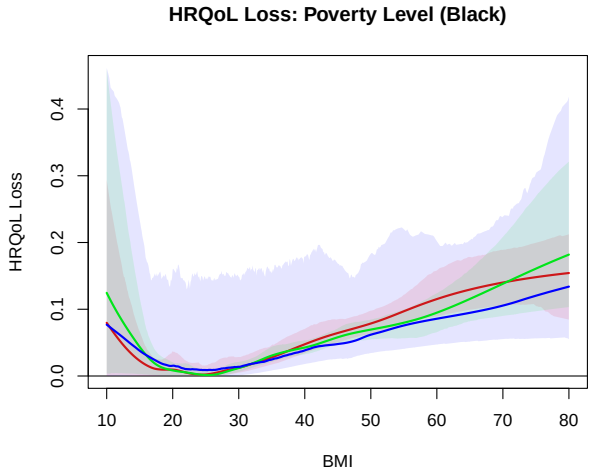

HRQoL: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

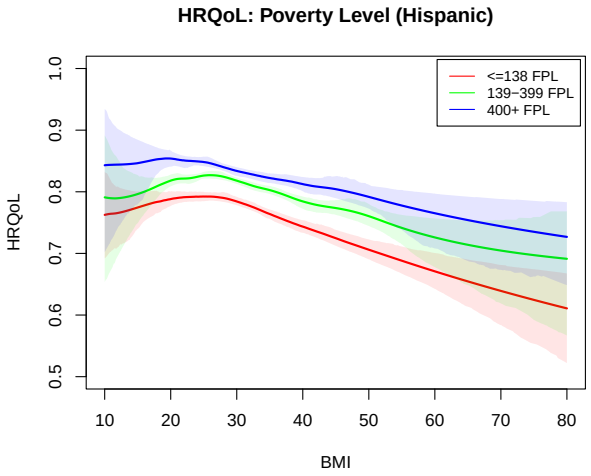

HRQoL Loss: Poverty Level (Females)
HRQoL Loss
BMI

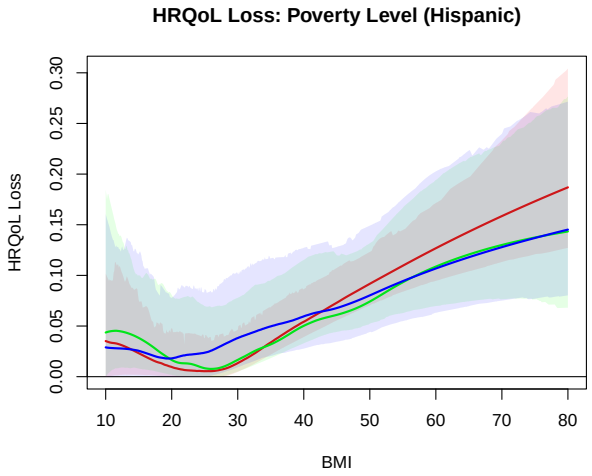

HRQoL: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

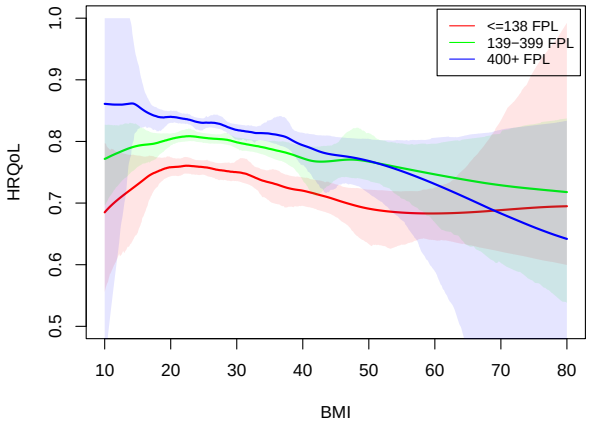

HRQoL Loss: Poverty Level (White)
HRQoL Loss
BMI

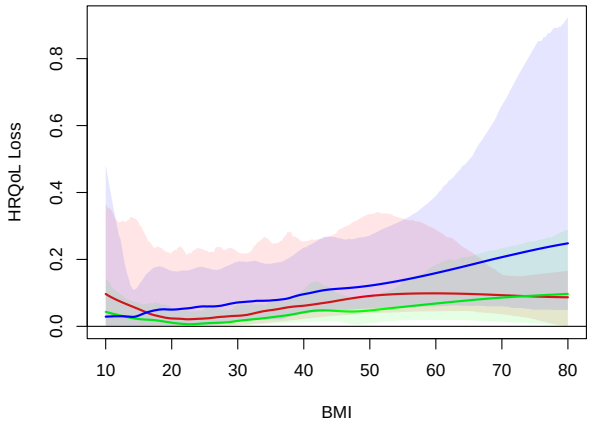

HRQoL: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

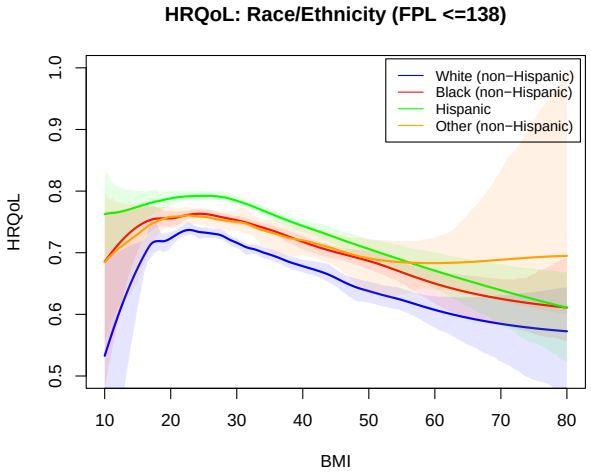

HRQoL Loss: Poverty Level (Black)
HRQoL Loss
BMI

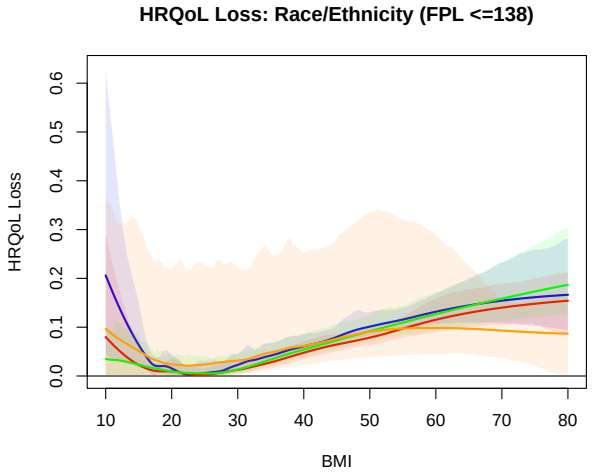

HRQoL: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

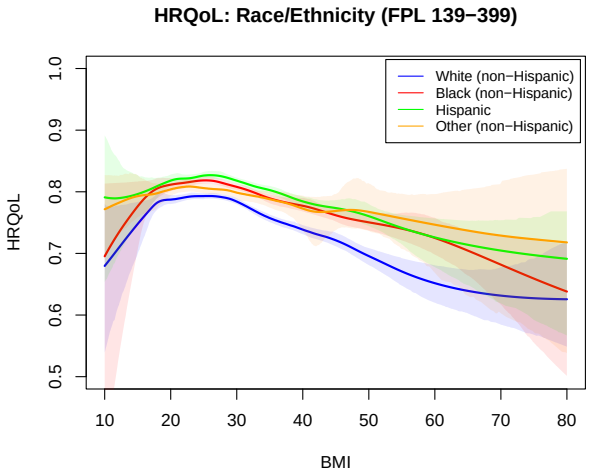

HRQoL Loss: Poverty Level (Hispanic)
HRQoL Loss
BMI

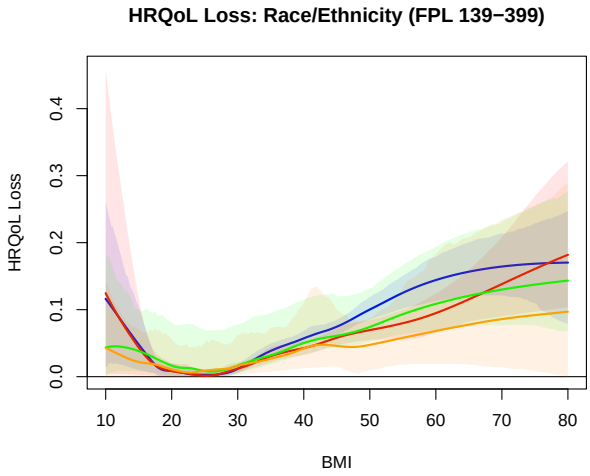

HRQoL: Poverty Level (Other)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL
BMI

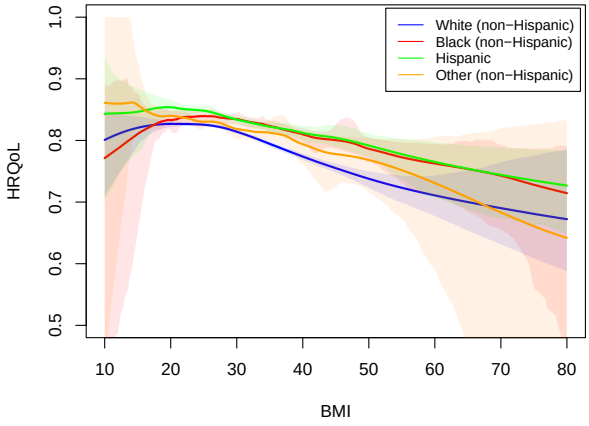

HRQoL Loss: Poverty Level (Other)
HRQoL Loss
BMI

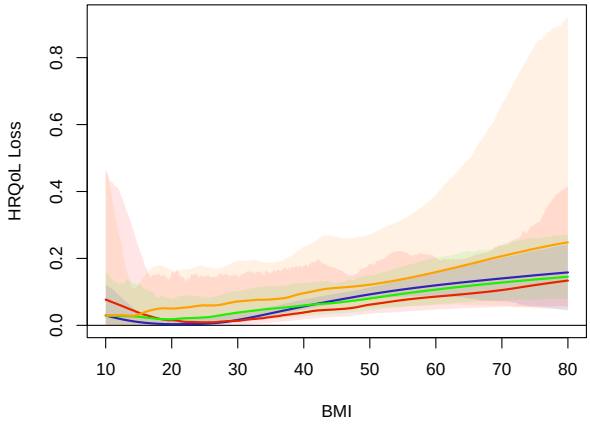

HRQoL: Race/Ethnicity (FPL <=138)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL
BMI


HRQoL Loss: Race/Ethnicity (FPL <=138)
HRQoL Loss
BMI

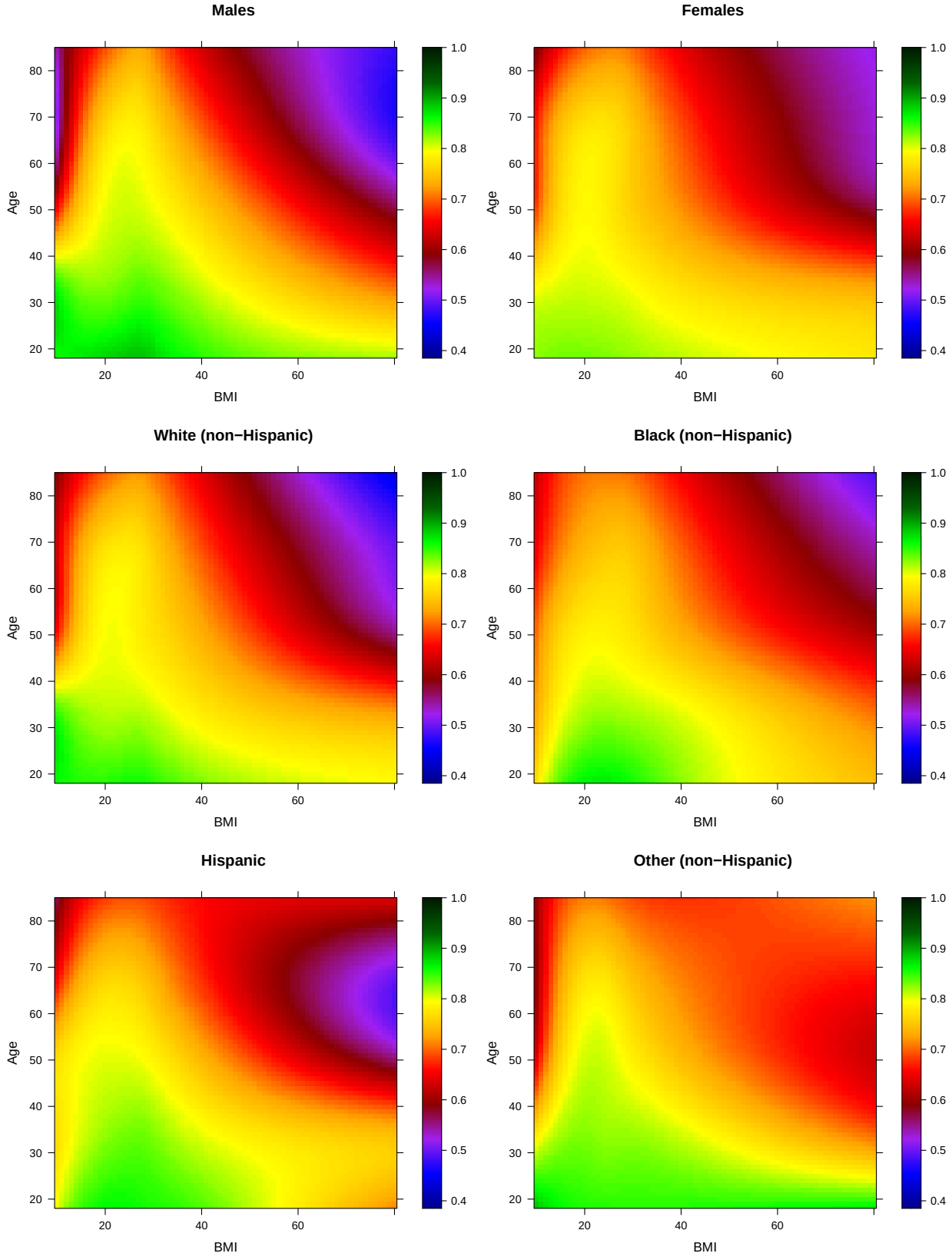

HRQoL: Race/Ethnicity (FPL 139−399)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL
BMI

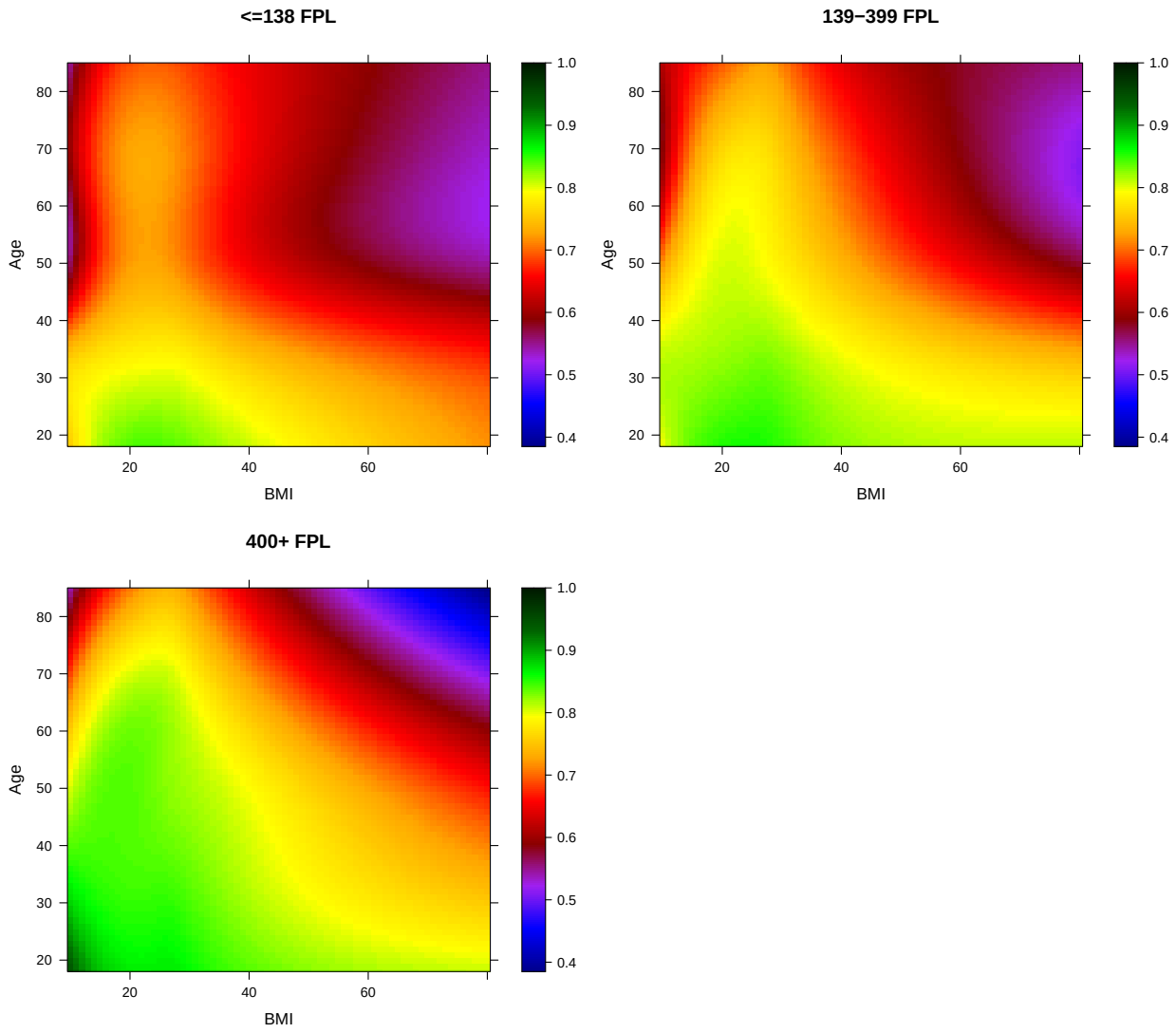

HRQoL Loss: Race/Ethnicity (FPL 139−399)
HRQoL Loss
BMI


HRQoL: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL
BMI


HRQoL Loss: Race/Ethnicity (FPL 400+)
HRQoL Loss
BMI

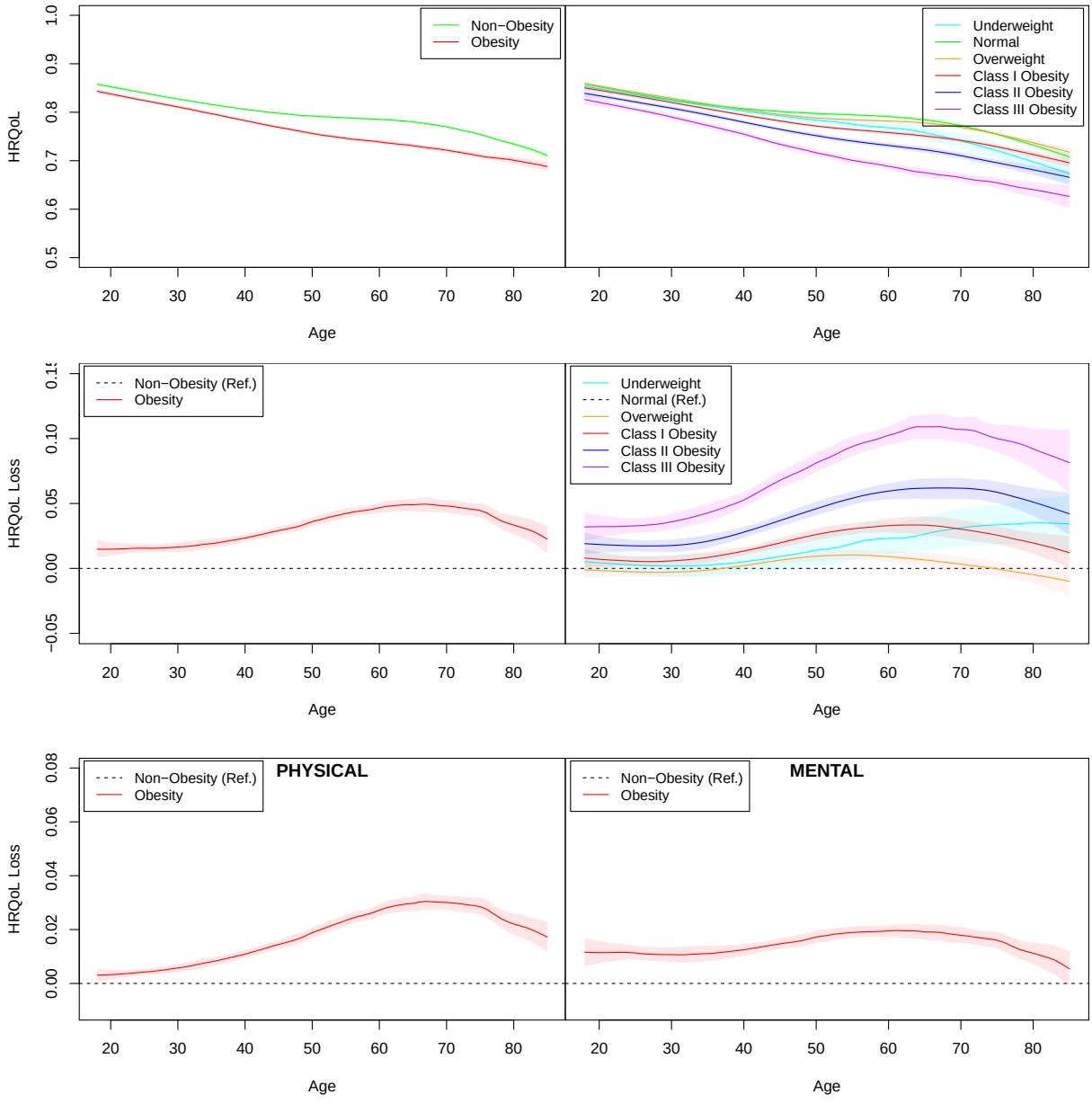
## 6.2 HRQoL by Age and BMI

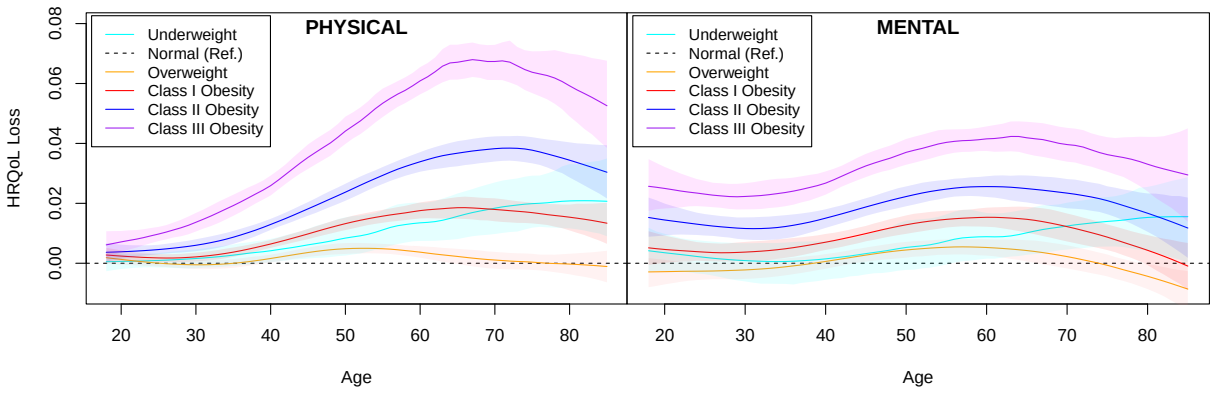



<=138 FPL
139−399 FPL
400+ FPL
Age
BMI
20
30
40
50
60
70
80
0.4
0.5
0.6
0.7
0.8
0.9
1.0

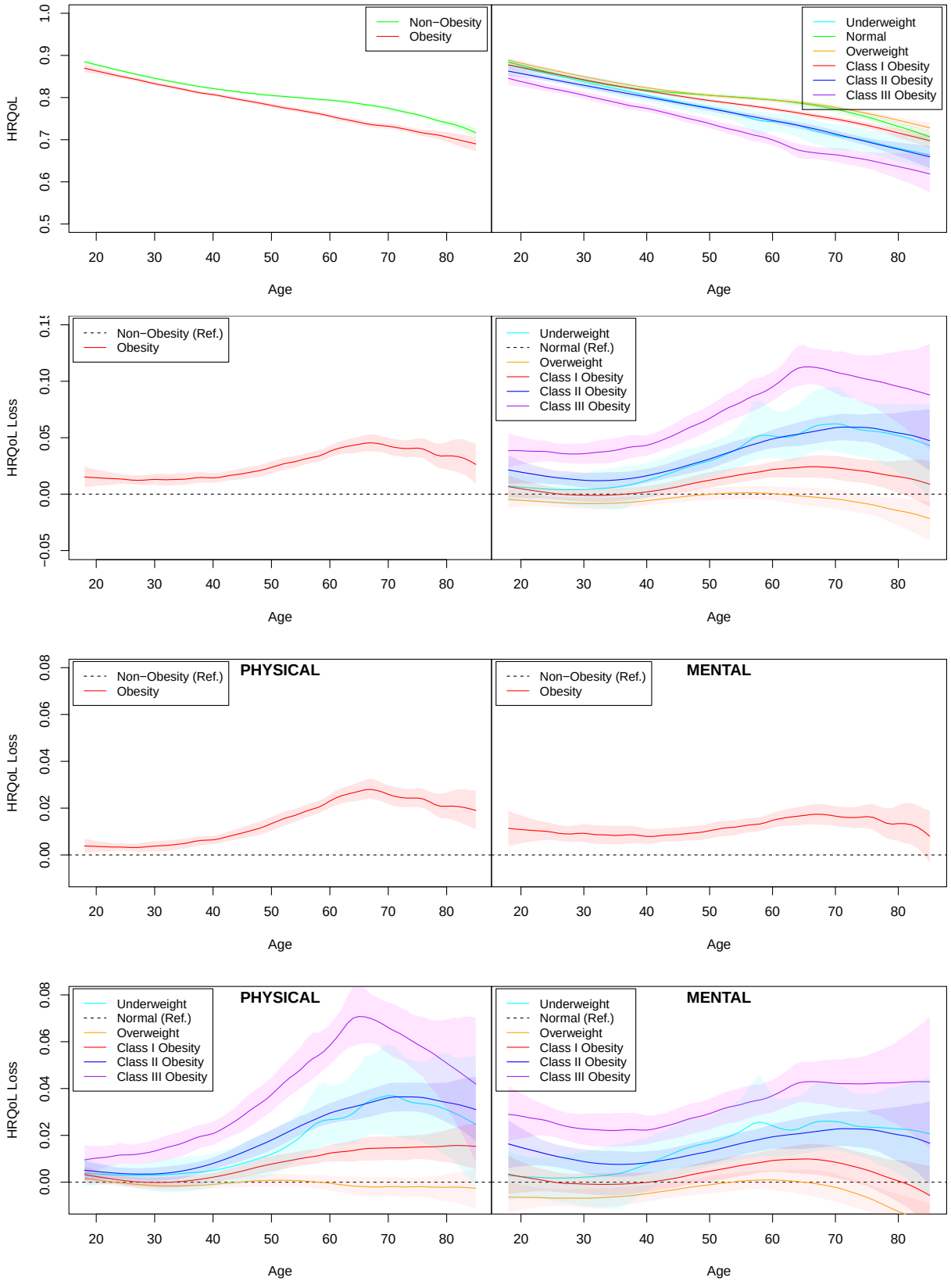
## 6.3 BMI Category HRQoL by Age

### 6.3.1 Overall

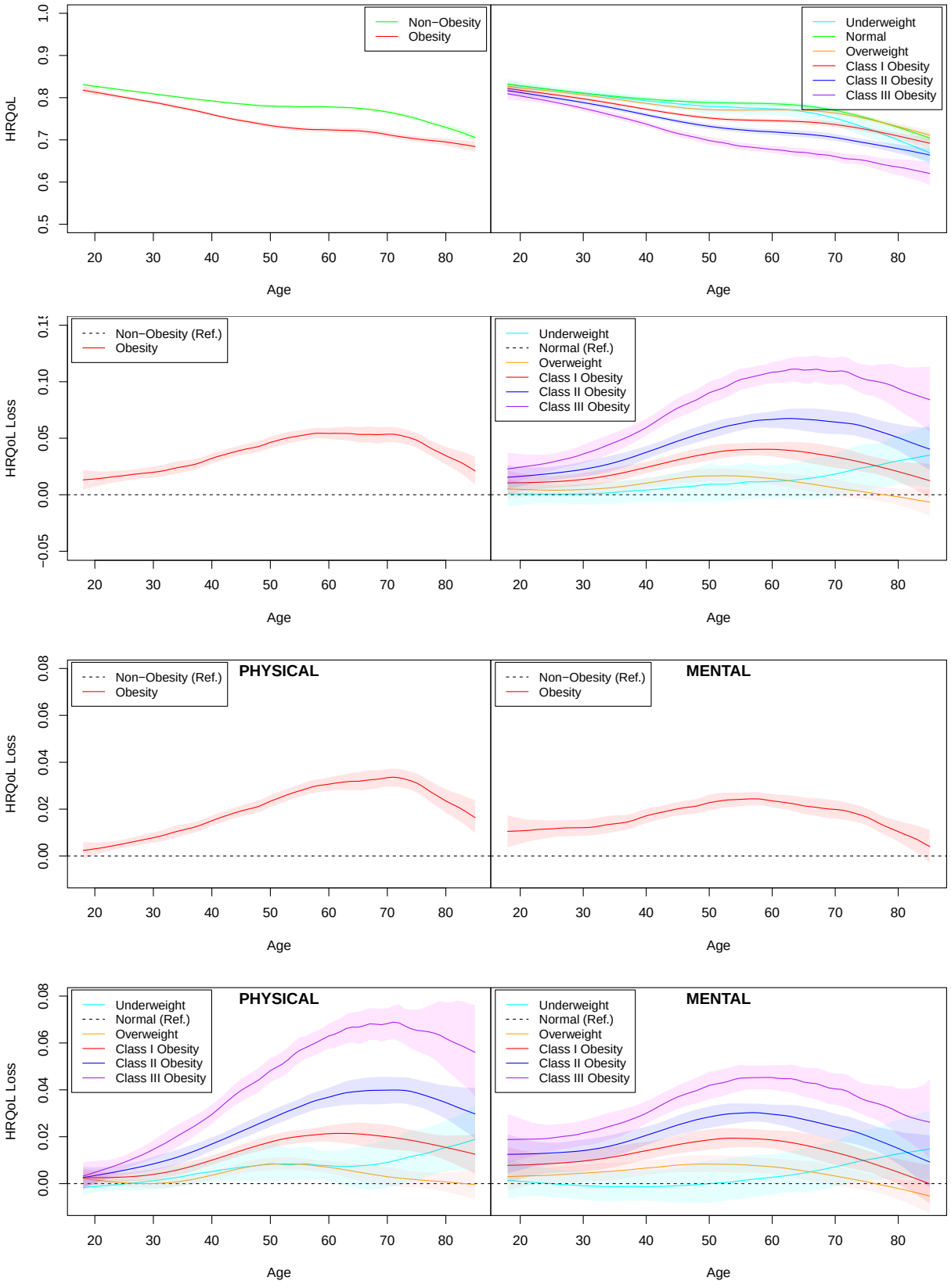



PHYSICAL
MENTAL
Underweight
Normal (Ref.)
Overweight
Class I Obesity
Class II Obesity
Class III Obesity
HRQoL Loss
0.00
0.02
0.04
0.06
0.08
20
30
40
50
60
70
80
Age

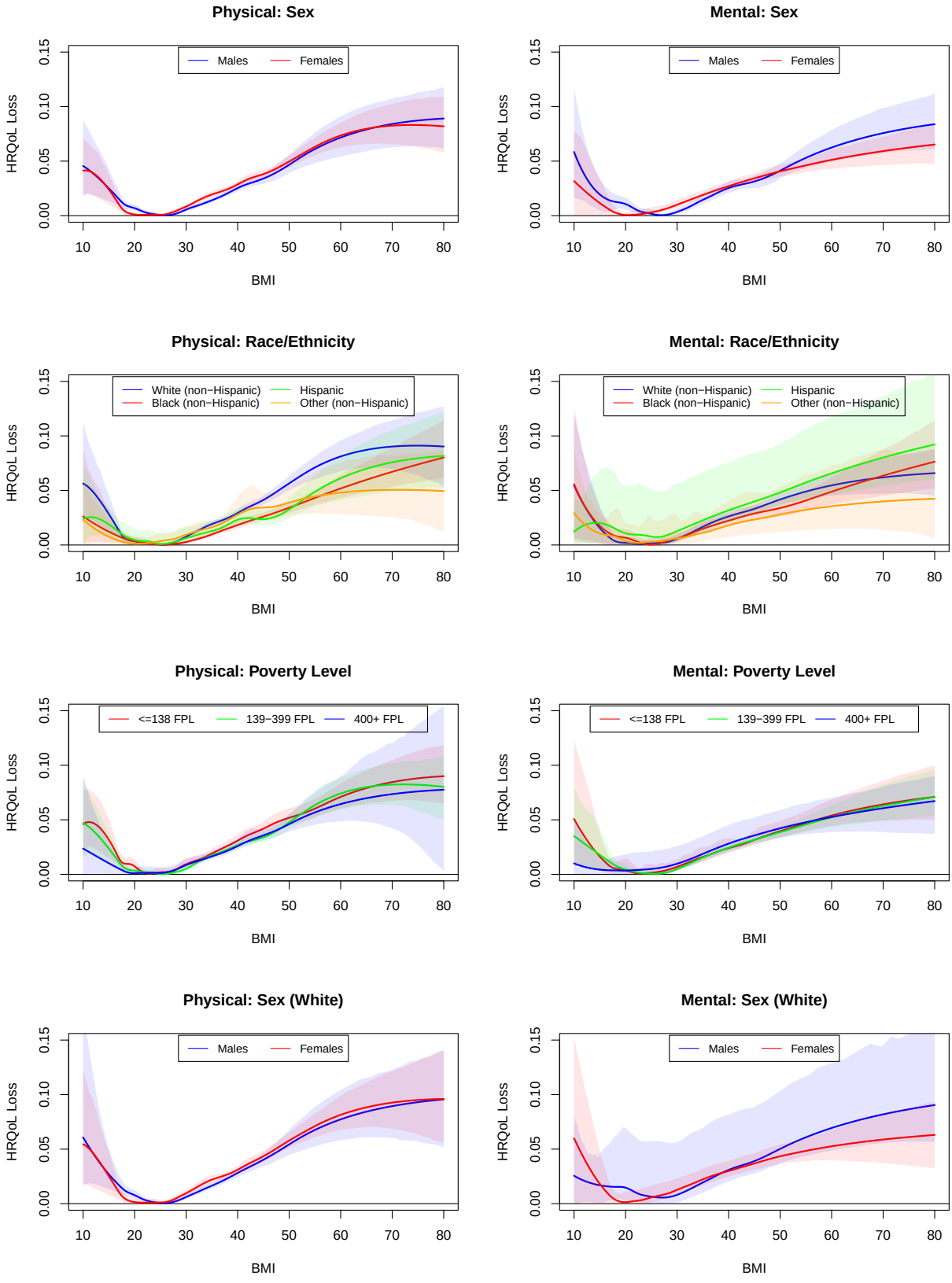
### 6.3.2 Males

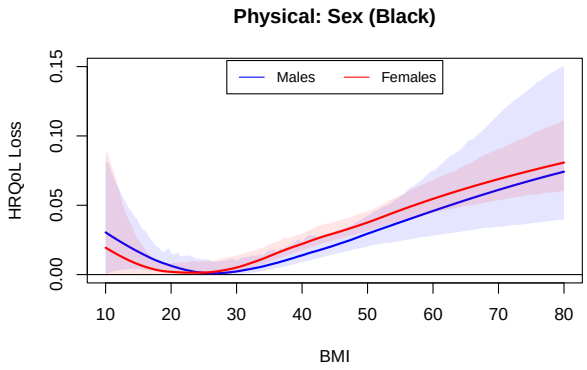

HRQoL
Non−Obesity
Obesity
Underweight
Normal
Overweight
Class I Obesity
Class II Obesity
Class III Obesity
Age
HRQoL Loss
Non−Obesity (Ref.)
Normal (Ref.)
PHYSICAL
MENTAL

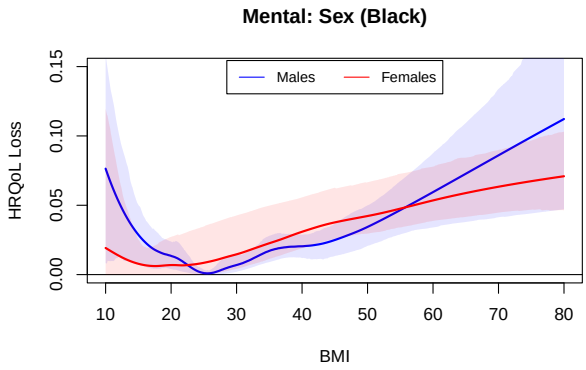
### 6.3.3 Females

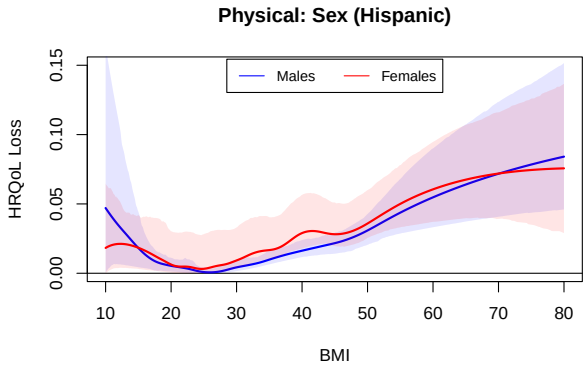

HRQoL
Non−Obesity
Obesity
Underweight
Normal
Overweight
Class I Obesity
Class II Obesity
Class III Obesity
Age
HRQoL Loss
Non−Obesity (Ref.)
Normal (Ref.)
PHYSICAL
MENTAL

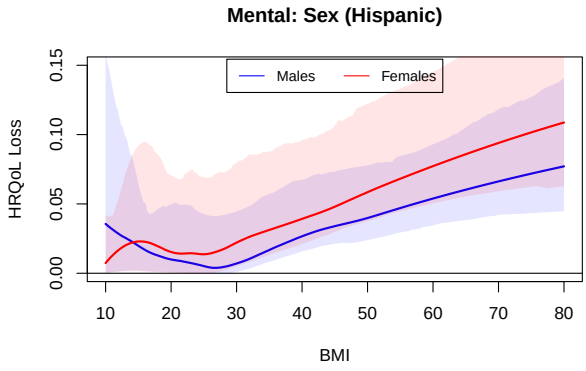
## 6.4 BMI-Related HRQoL Loss: Physical vs Mental

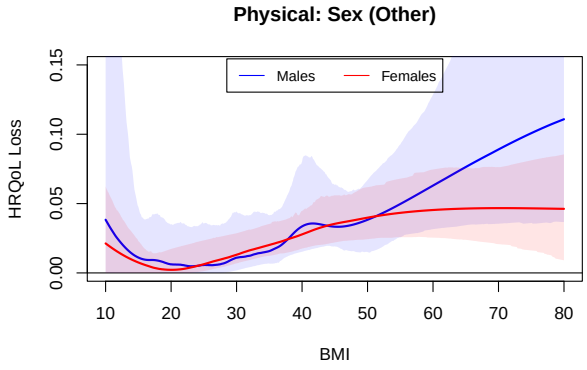


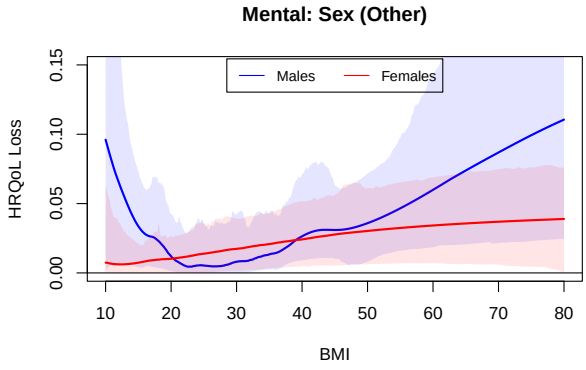

Physical: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

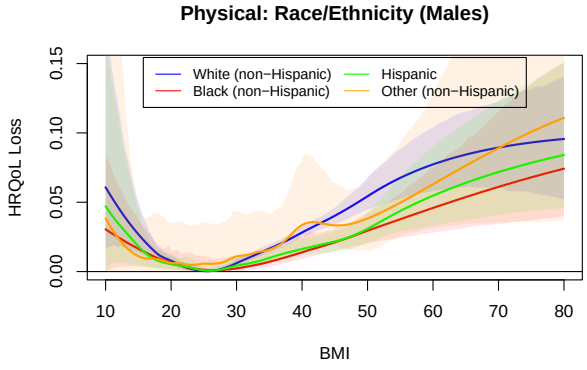

Mental: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

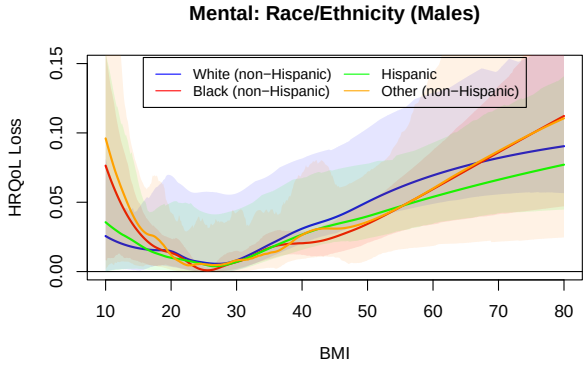

Physical: Sex (Hispanic)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

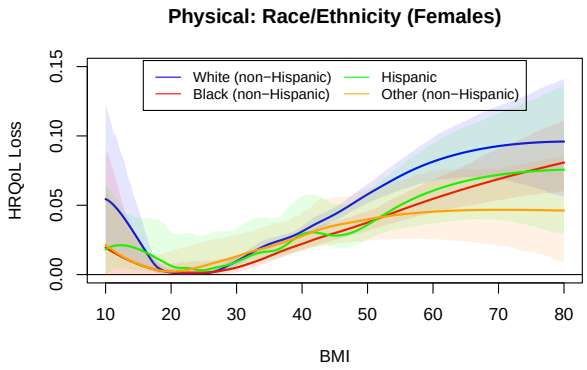

Mental: Sex (Hispanic)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

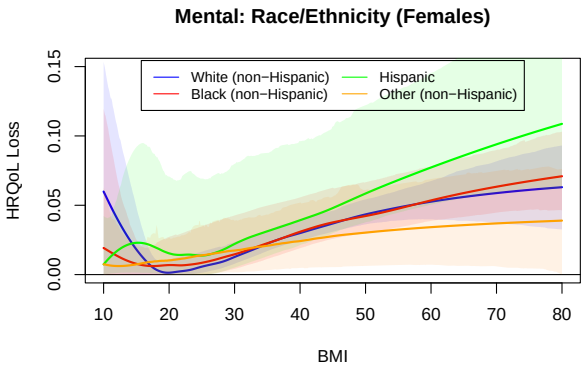

Physical: Sex (Other)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

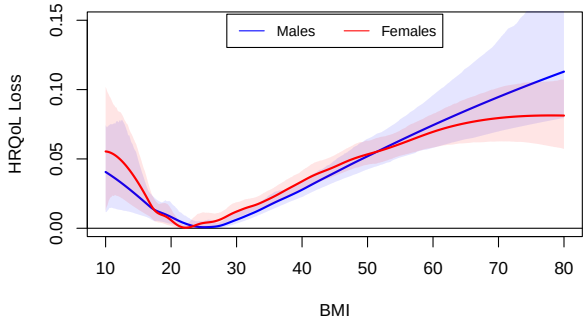

Mental: Sex (Other)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

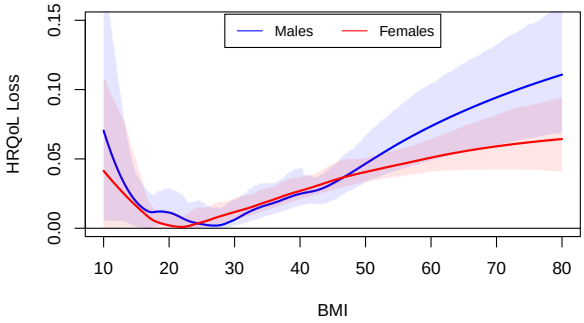

Physical: Race/Ethnicity (Males)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

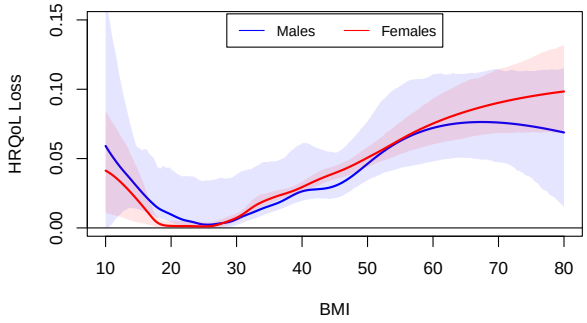

Mental: Race/Ethnicity (Males)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

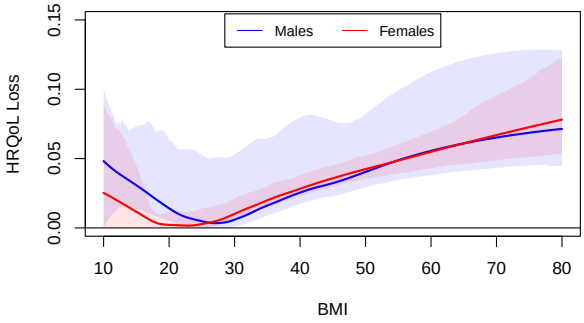

Physical: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

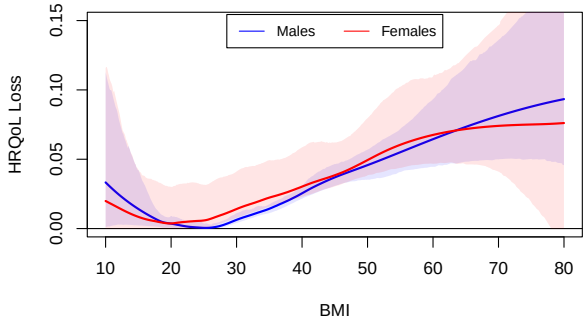

Mental: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

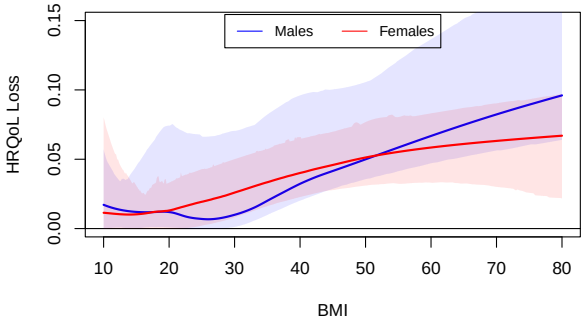

Physical: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

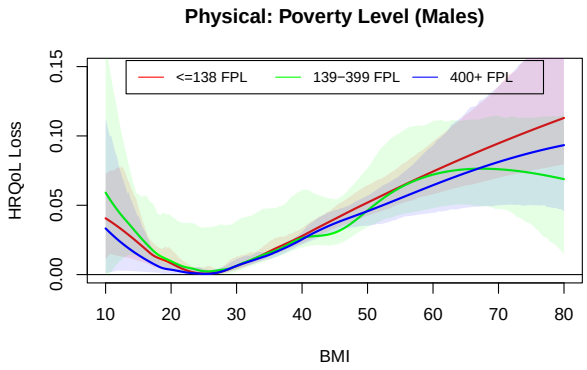

Mental: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

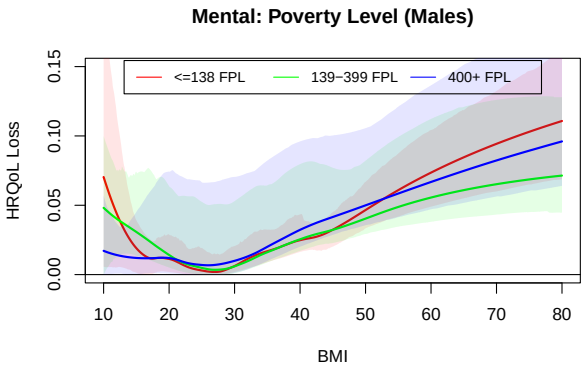

Physical: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

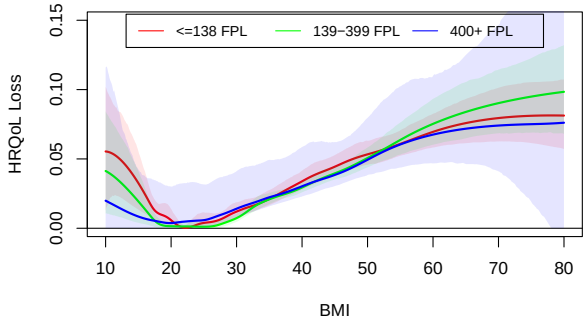

Mental: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

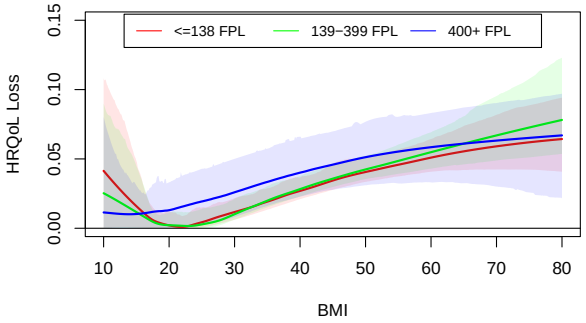

Physical: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

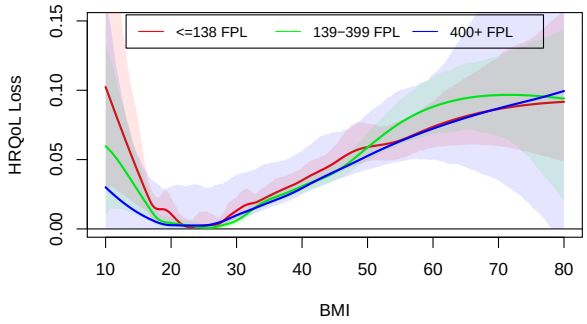

Mental: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

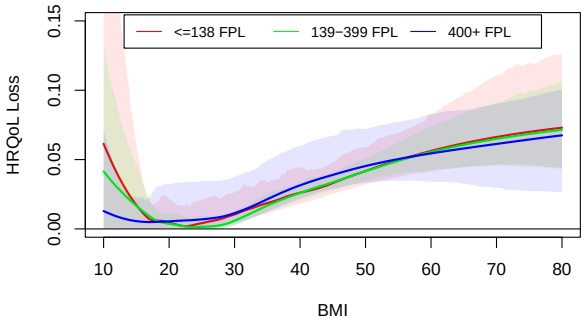

Physical: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

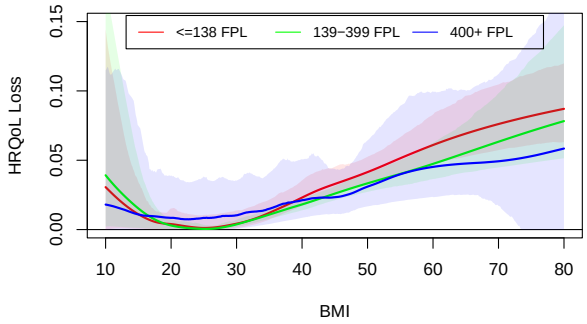

Mental: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

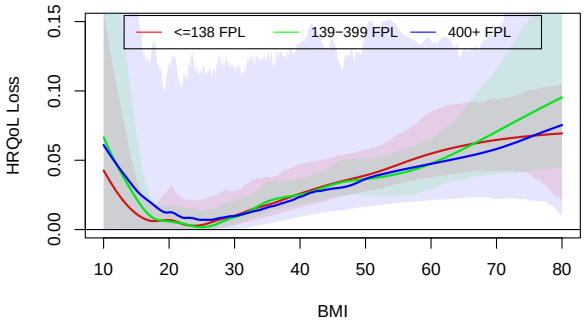

Physical: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

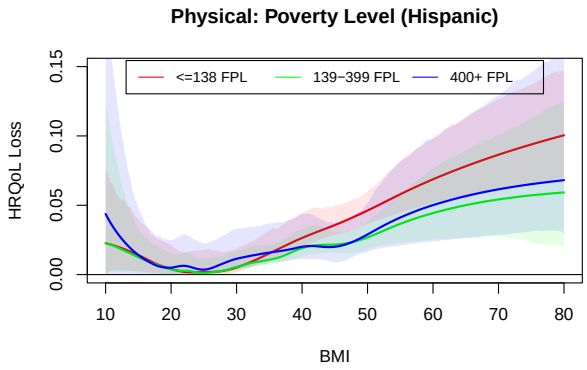

Mental: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

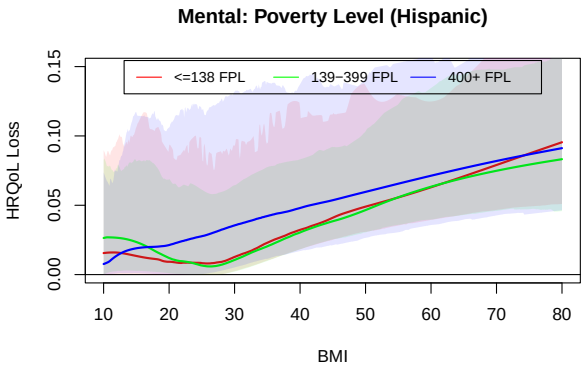

Physical: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

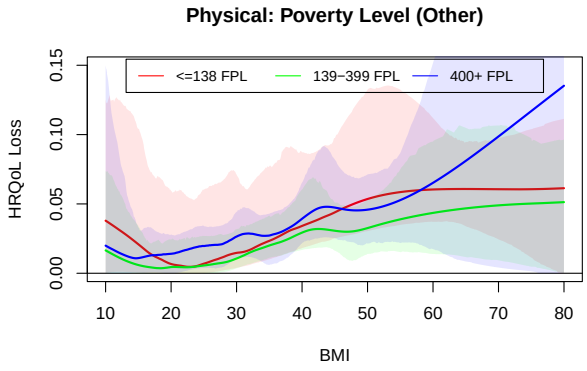

Mental: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

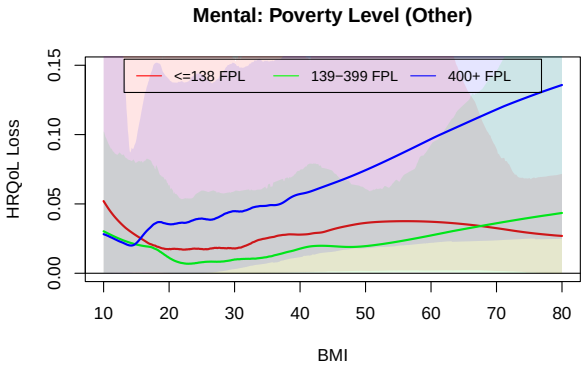

Physical: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

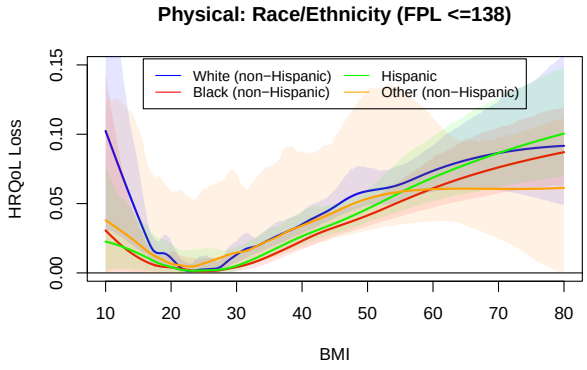

Mental: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

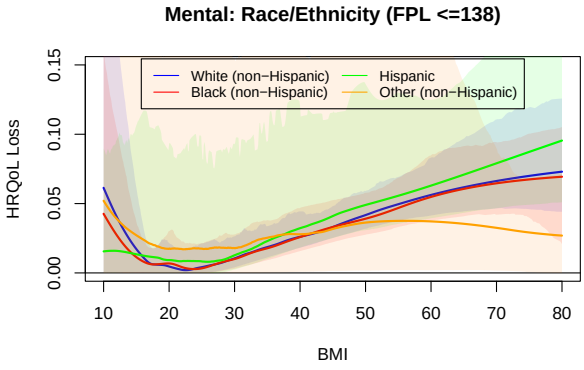

Physical: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

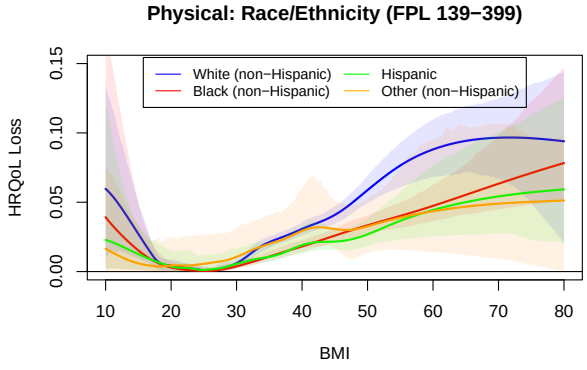

Mental: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

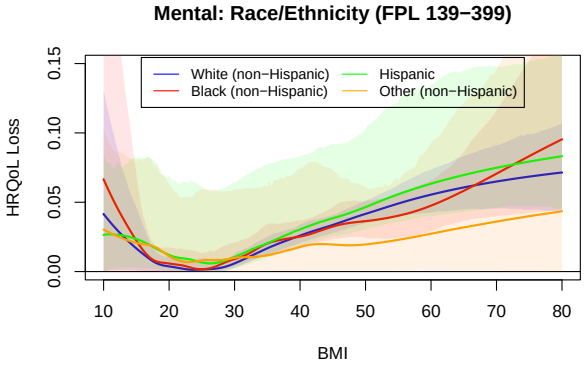

Physical: Poverty Level (Other)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

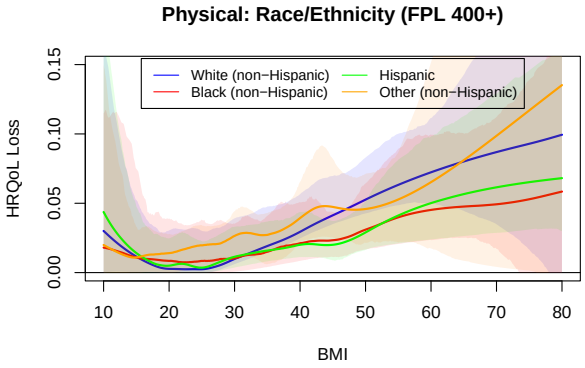

Mental: Poverty Level (Other)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

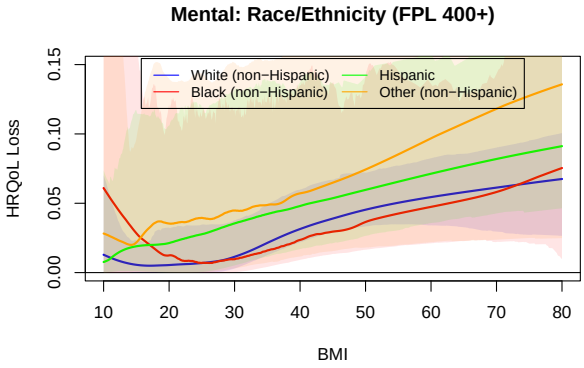

Physical: Race/Ethnicity (FPL <=138)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI


Mental: Race/Ethnicity (FPL <=138)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

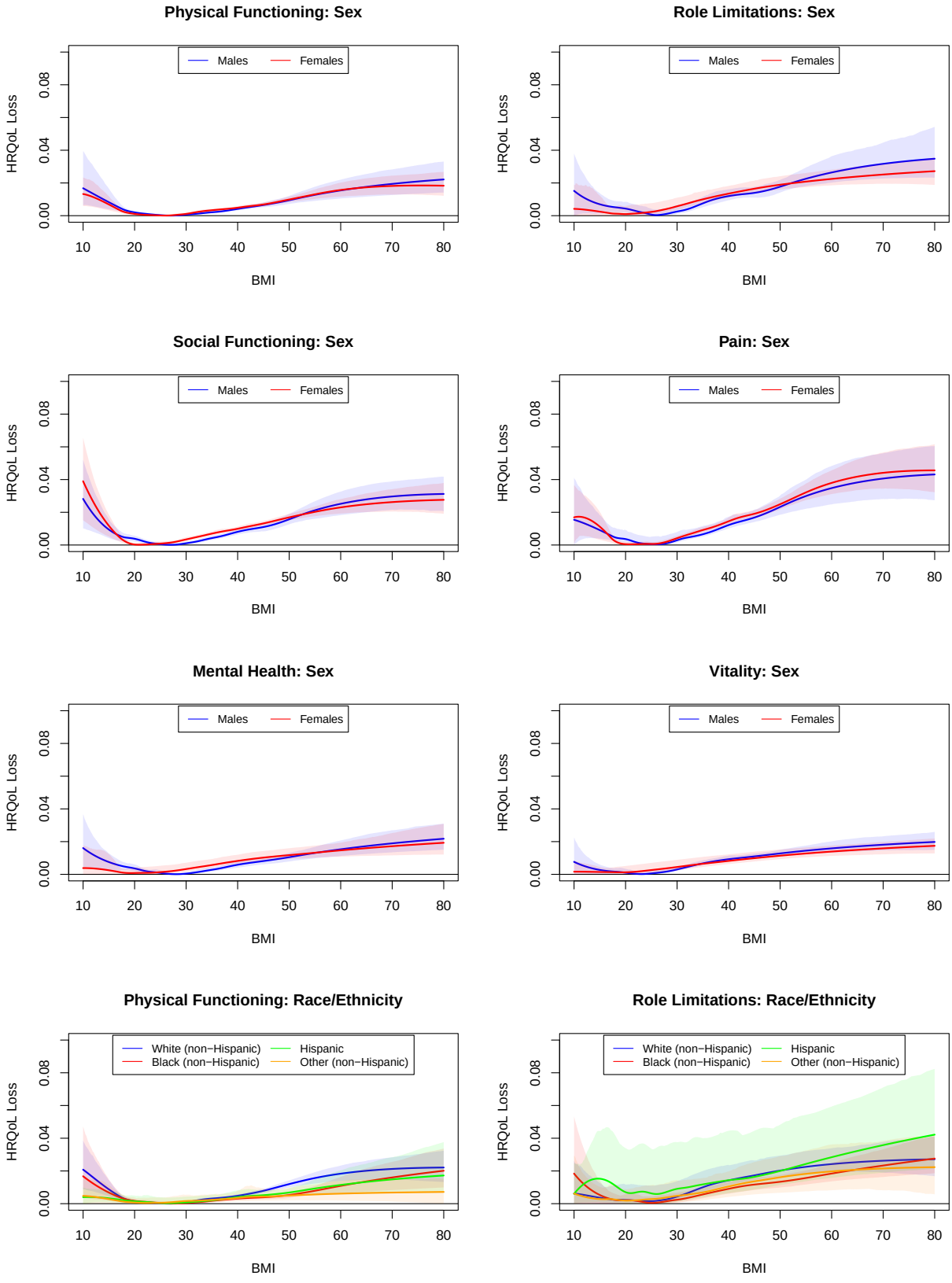

Physical: Race/Ethnicity (FPL 139−399)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

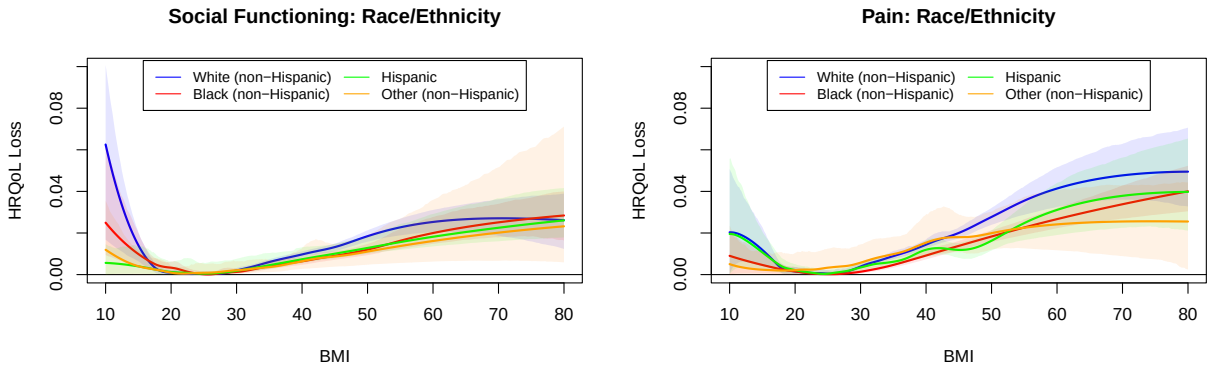

Mental: Race/Ethnicity (FPL 139−399)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI


Physical: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

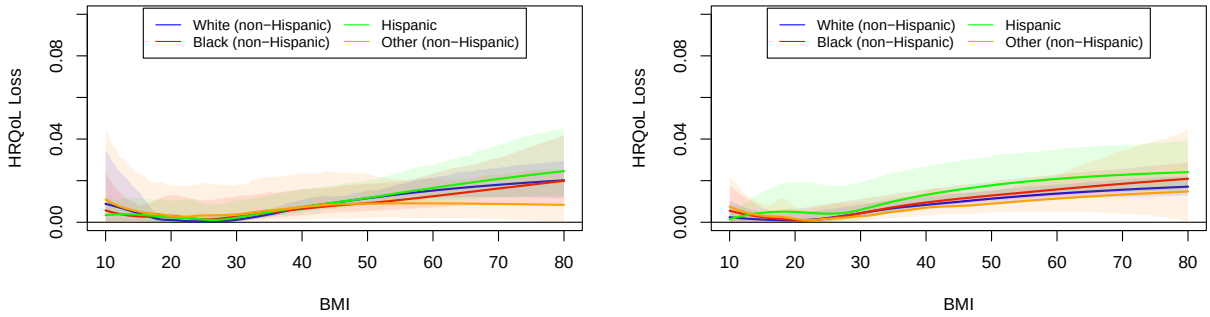

Mental: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.05
0.10
0.15
10
20
30
40
50
60
70
80
BMI

## 6.5 BMI-Related HRQoL Loss: SF-6D Domain

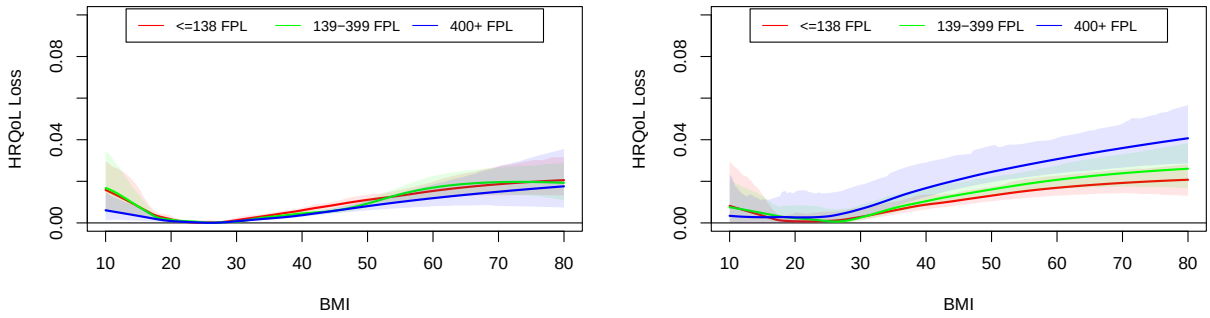



Social Functioning: Race/Ethnicity
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

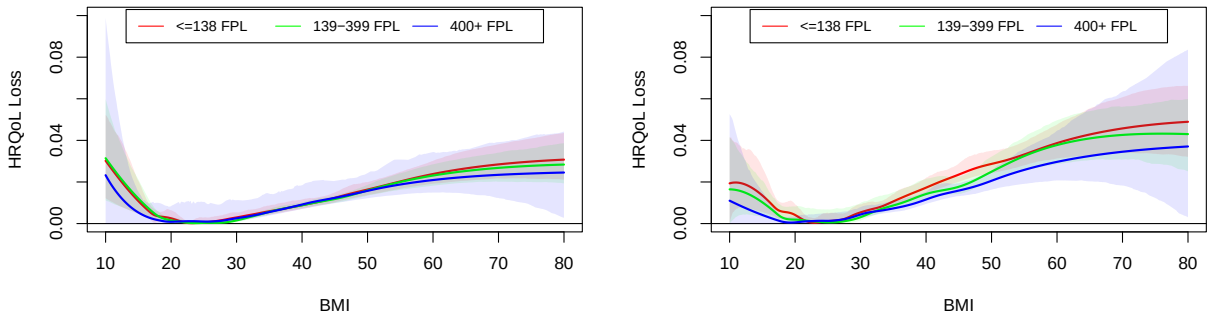

Pain: Race/Ethnicity
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Mental Health: Race/Ethnicity
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

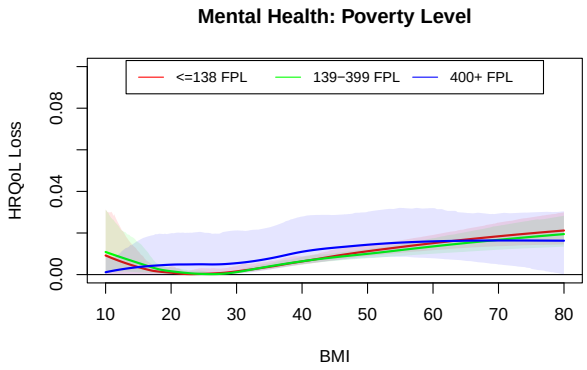

Vitality: Race/Ethnicity
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

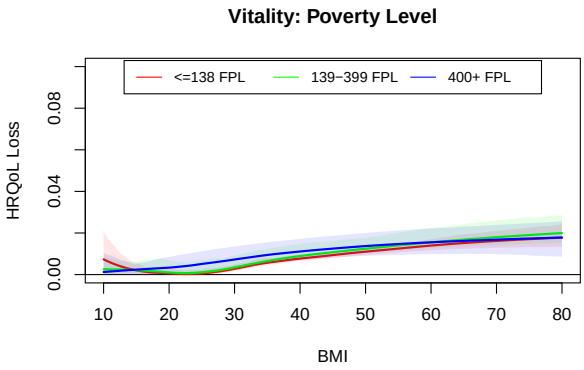

Physical Functioning: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

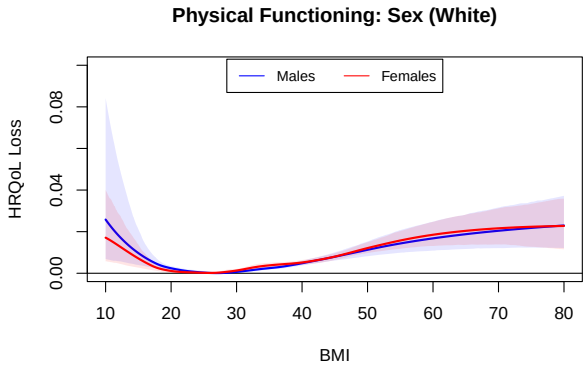

Role Limitations: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

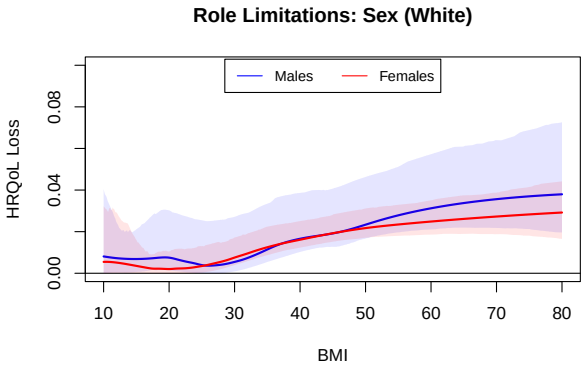

Social Functioning: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

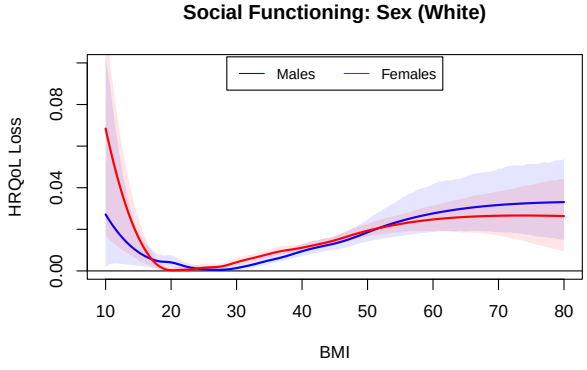

Pain: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

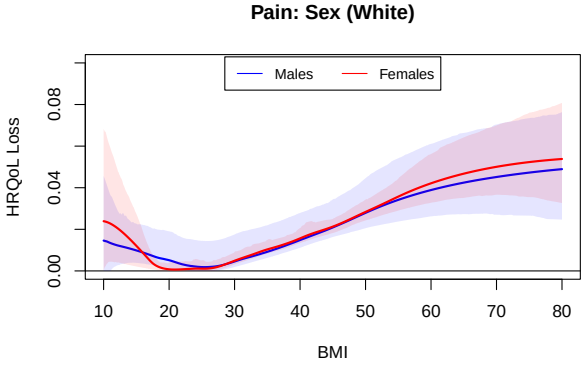

Mental Health: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

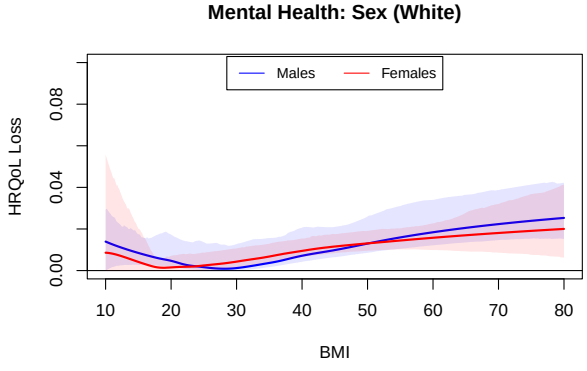

Vitality: Poverty Level
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

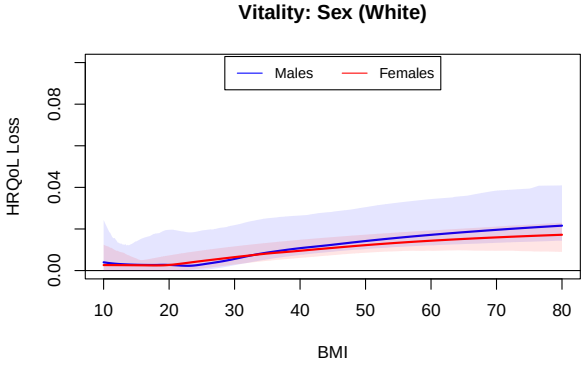

Physical Functioning: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

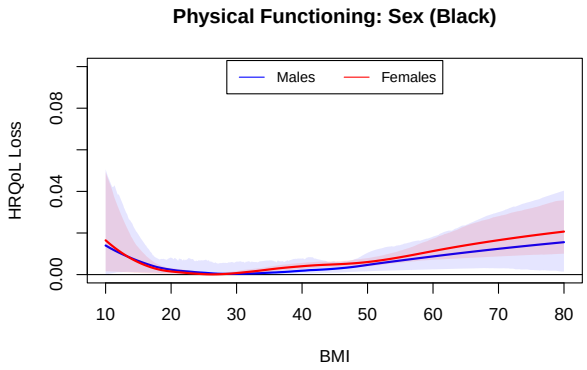

Role Limitations: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

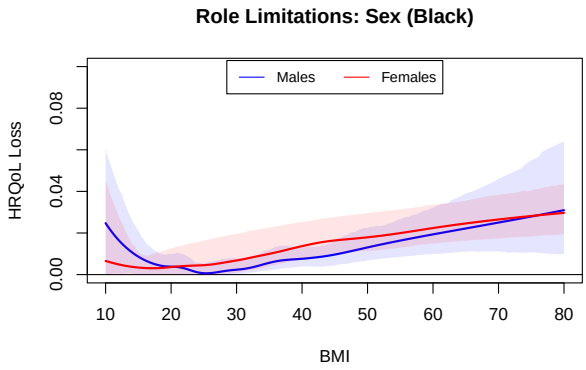

Social Functioning: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

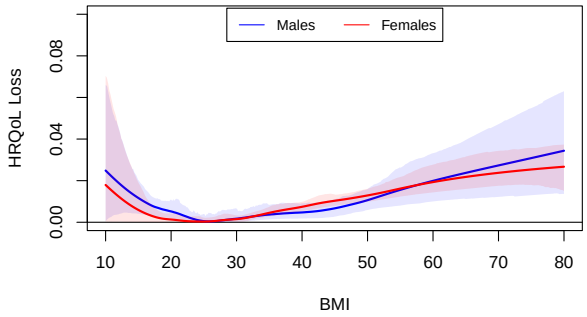

Pain: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

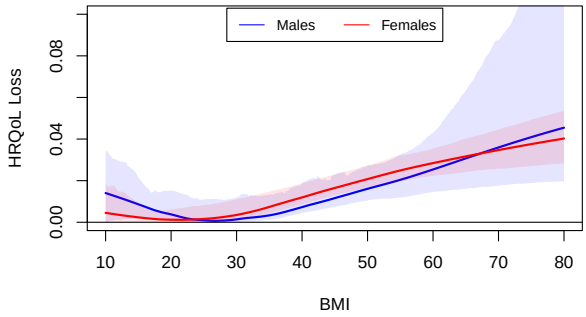

Mental Health: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

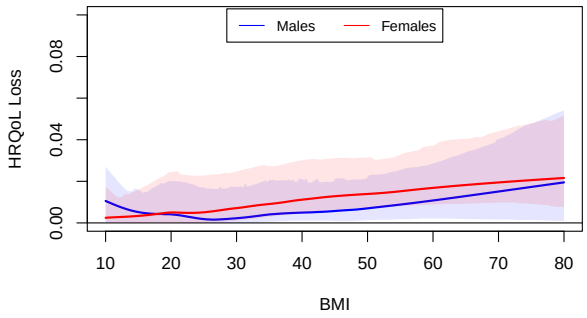

Vitality: Sex (White)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

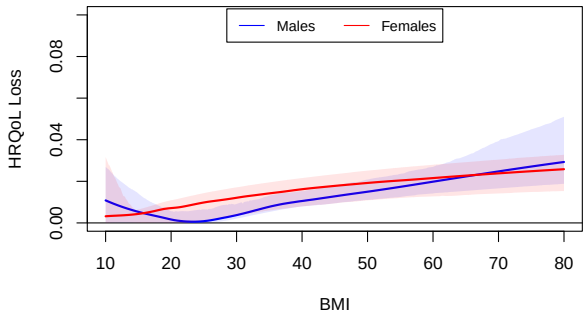

Physical Functioning: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

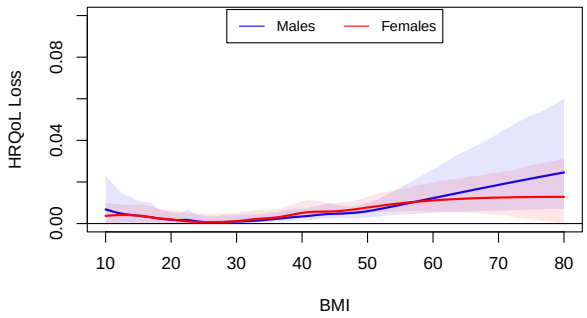

Role Limitations: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

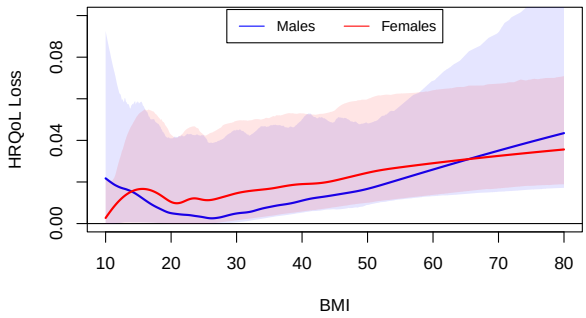

Social Functioning: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

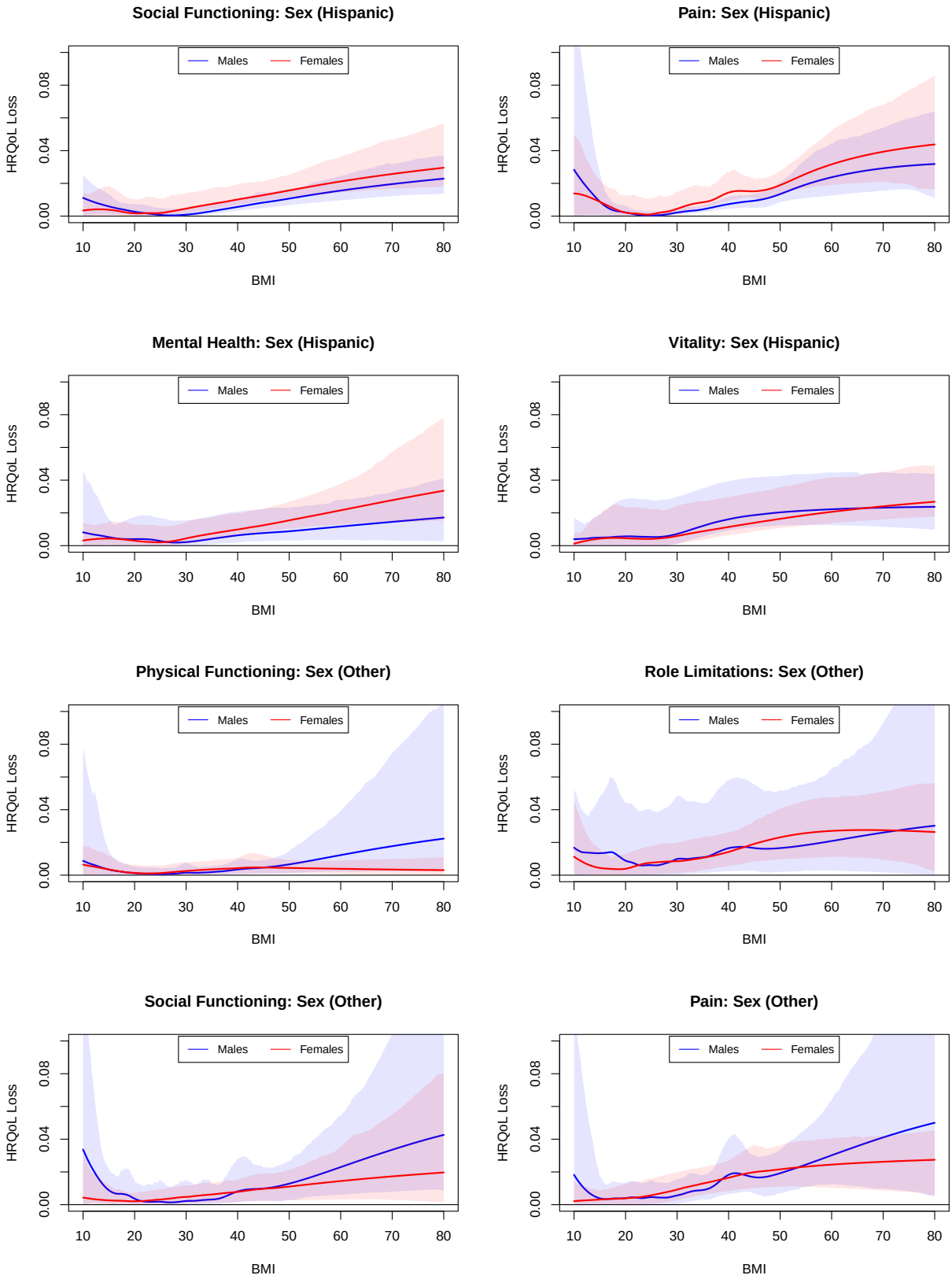

Pain: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Mental Health: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

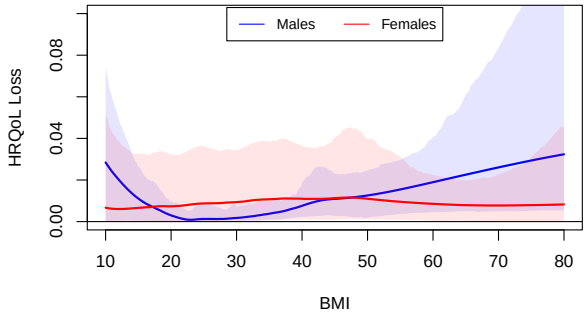

Vitality: Sex (Black)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Physical Functioning: Sex (Hispanic)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

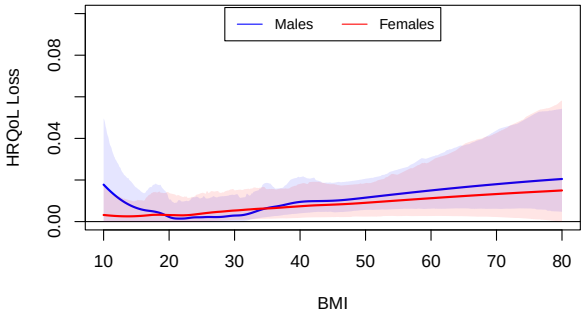

Role Limitations: Sex (Hispanic)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Social Functioning: Sex (Hispanic)
Pain: Sex (Hispanic)
Mental Health: Sex (Hispanic)
Vitality: Sex (Hispanic)
Physical Functioning: Sex (Other)
Role Limitations: Sex (Other)
Social Functioning: Sex (Other)
Pain: Sex (Other)
Males
Females
HRQoL Loss
0.00
0.04
0.08
BMI
10
20
30
40
50
60
70
80

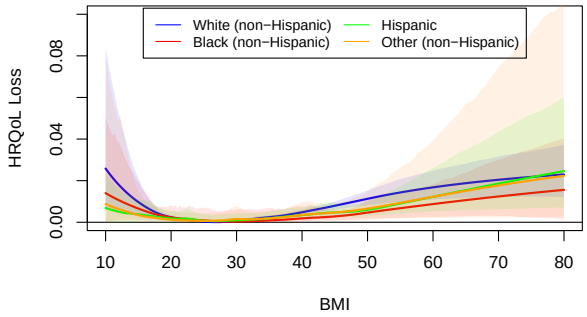
**Mental Health: Sex (Other)**



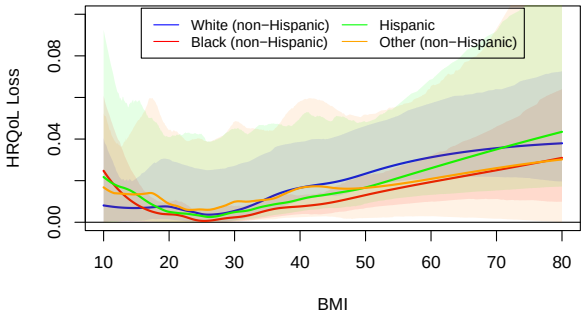

**Vitality: Sex (Other)**



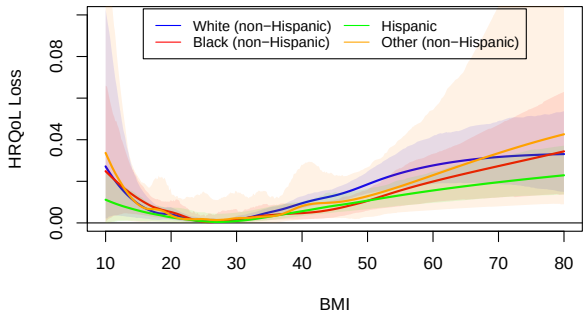

**Physical Functioning: Race/Ethnicity (Males)**



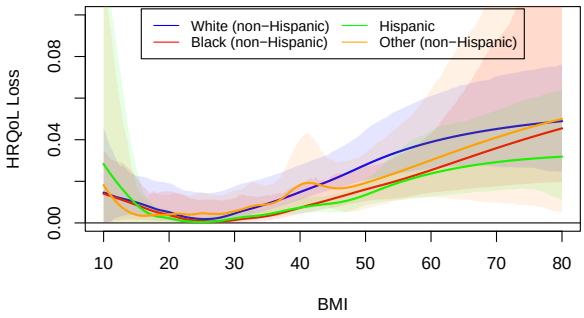

**Role Limitations: Race/Ethnicity (Males)**



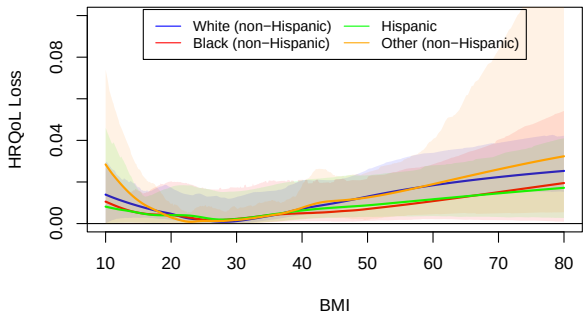

**Social Functioning: Race/Ethnicity (Males)**



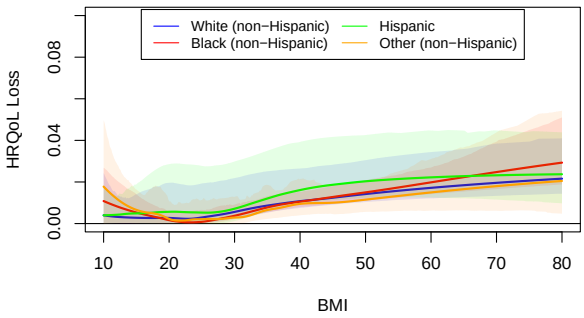

**Pain: Race/Ethnicity (Males)**

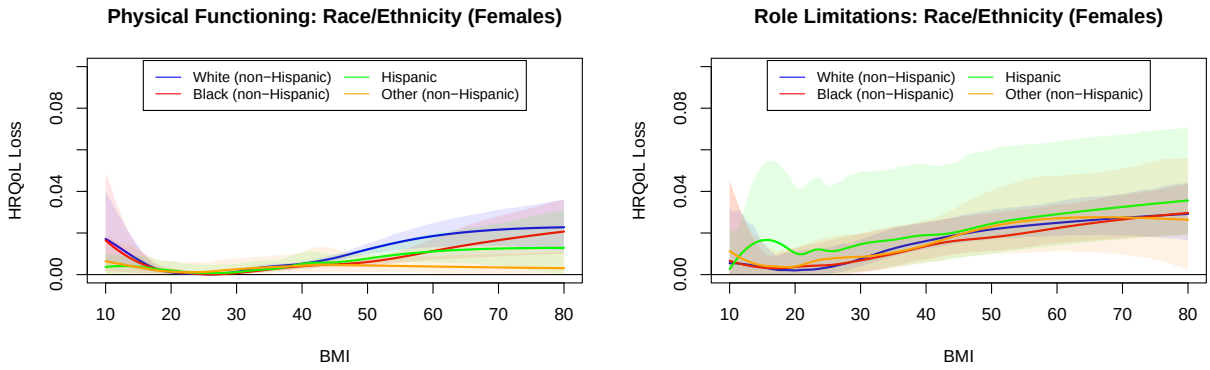



**Mental Health: Race/Ethnicity (Males)**

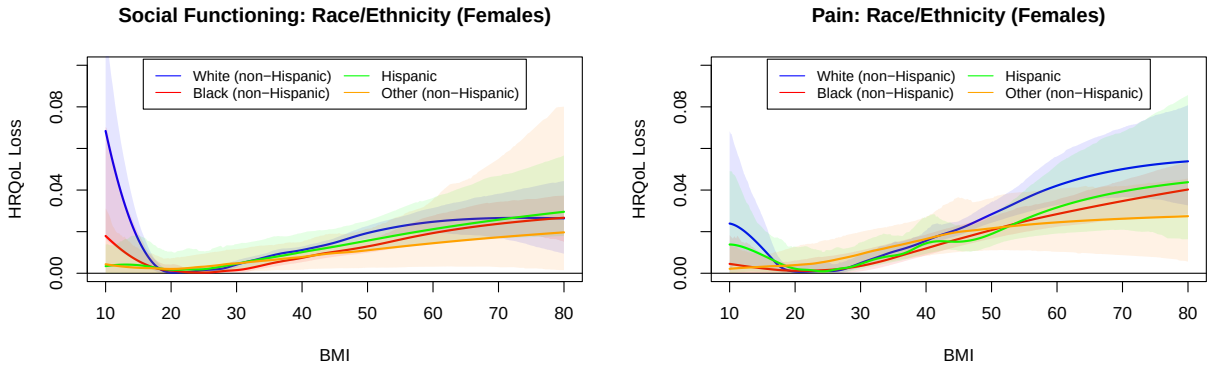



**Vitality: Race/Ethnicity (Males)**

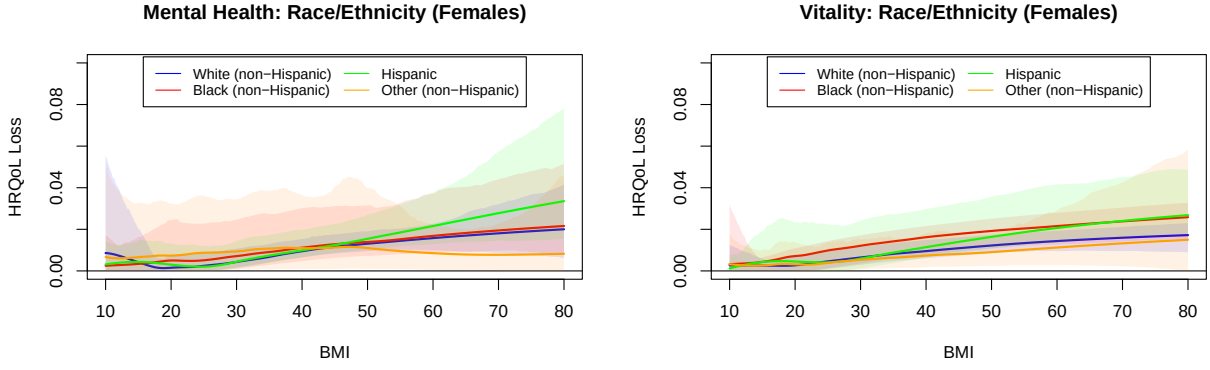



Physical Functioning: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

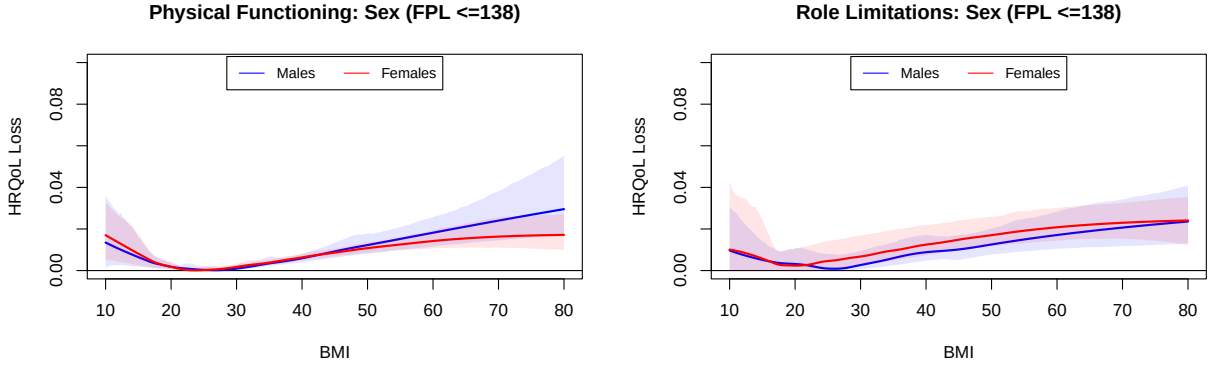

Role Limitations: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Social Functioning: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

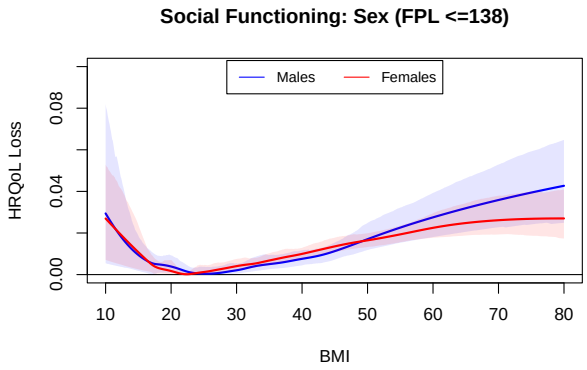

Pain: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

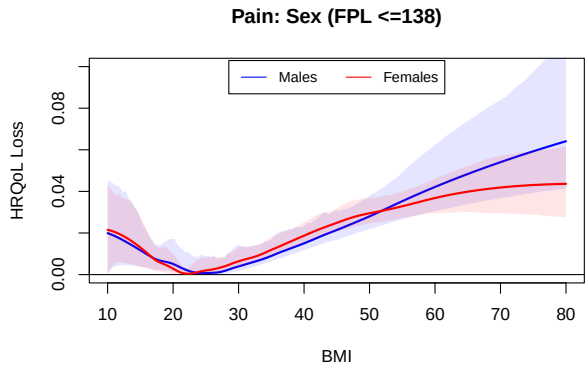

Mental Health: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

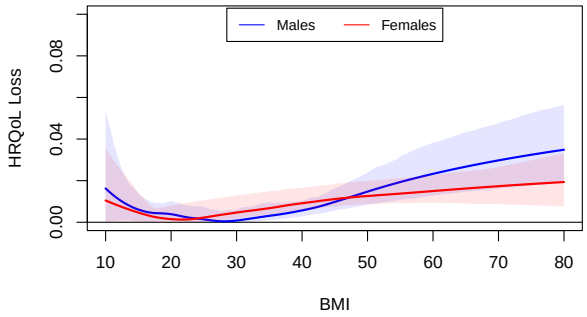

Vitality: Race/Ethnicity (Females)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

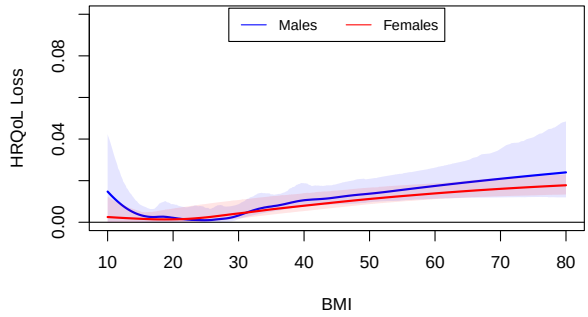

Physical Functioning: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

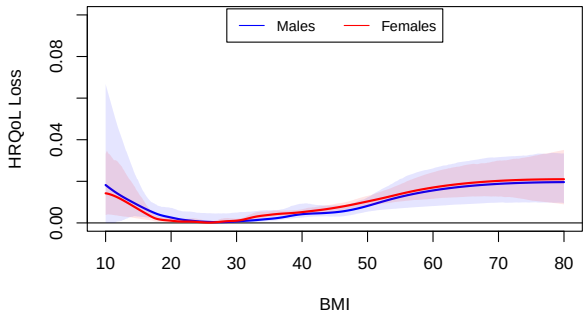

Role Limitations: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

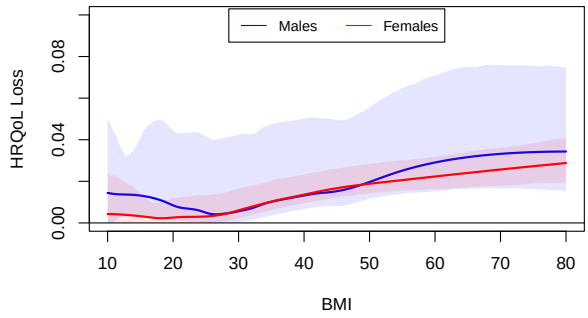

Social Functioning: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

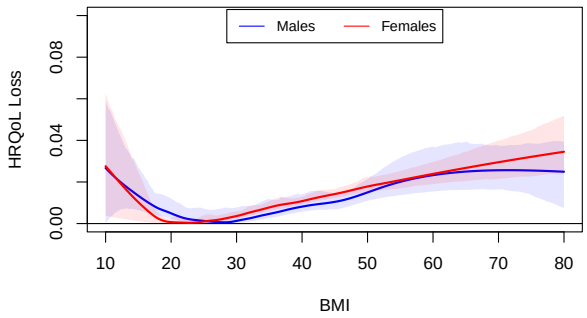

Pain: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

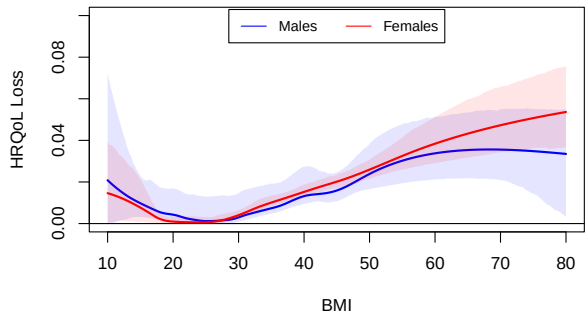

Mental Health: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

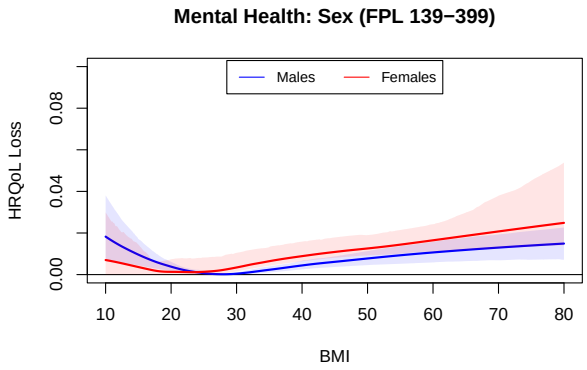

Vitality: Sex (FPL <=138)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

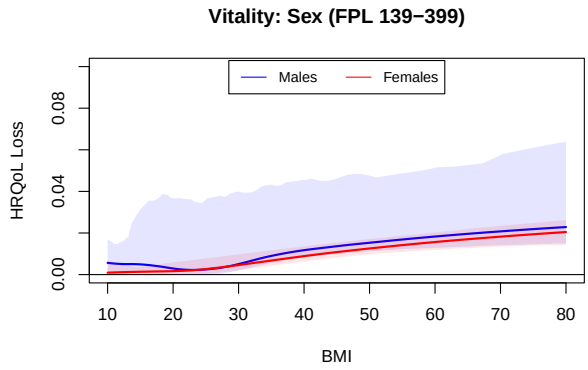

Physical Functioning: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

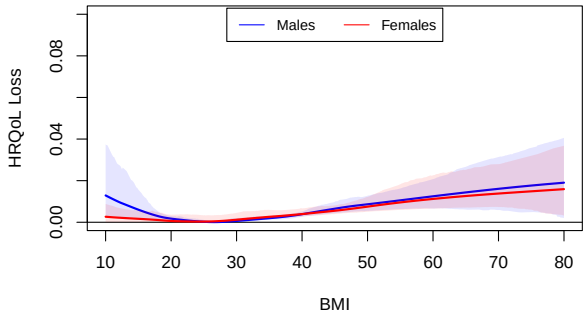

Role Limitations: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

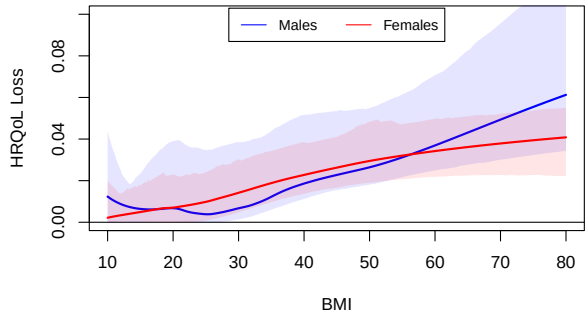

Social Functioning: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

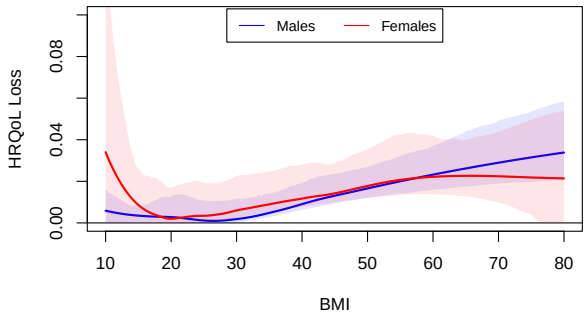

Pain: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

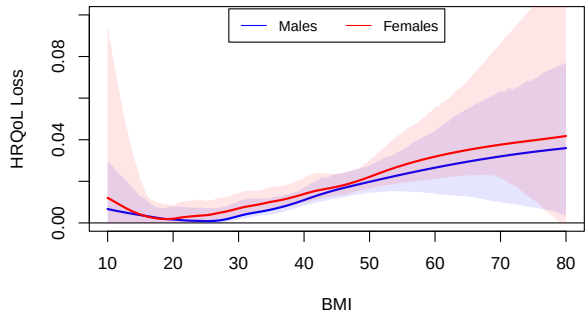

Mental Health: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

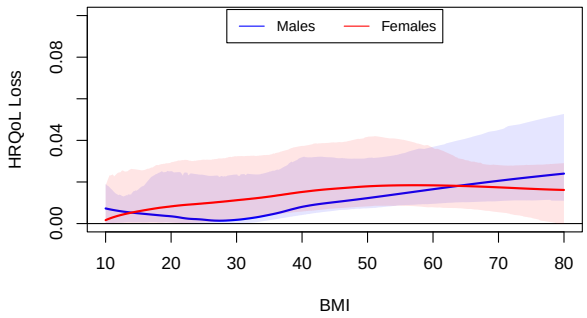

Vitality: Sex (FPL 139−399)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

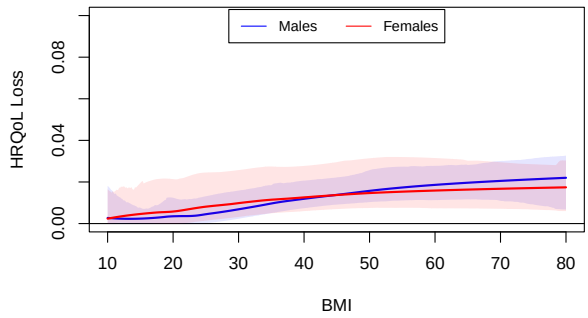

Physical Functioning: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

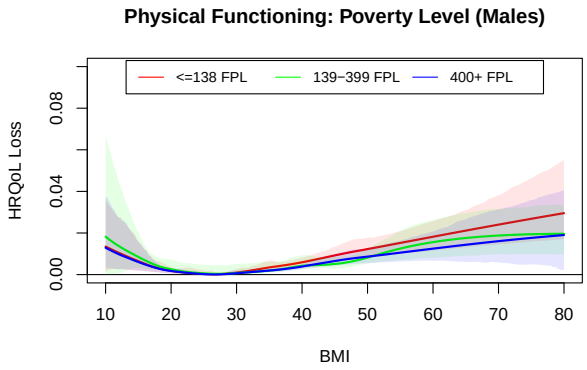

Role Limitations: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

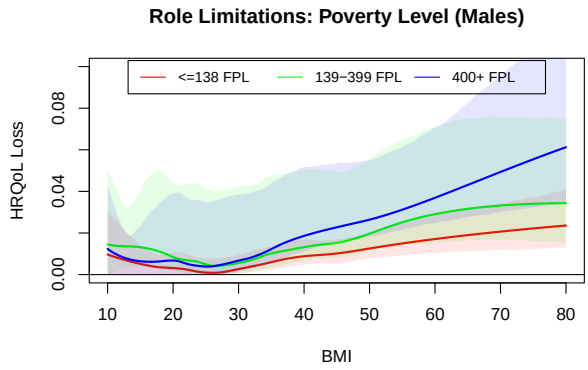

Social Functioning: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

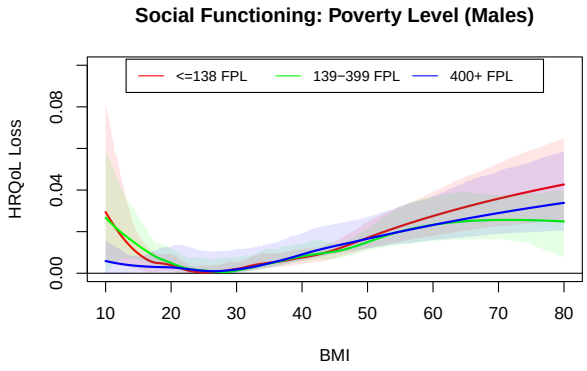

Pain: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

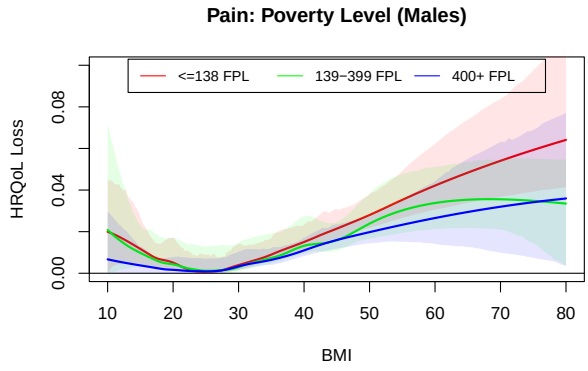

Mental Health: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

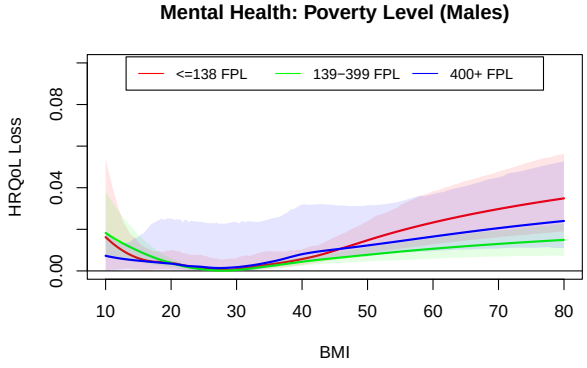

Vitality: Sex (FPL 400+)
Males
Females
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

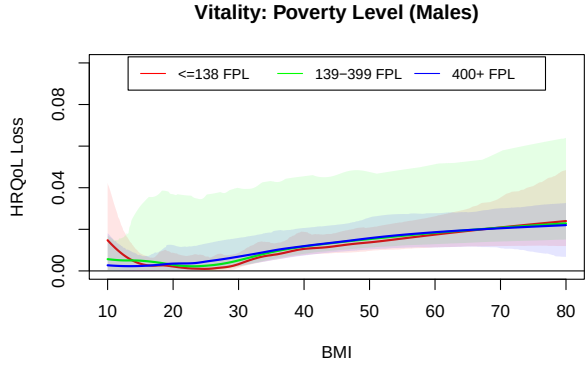

Physical Functioning: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

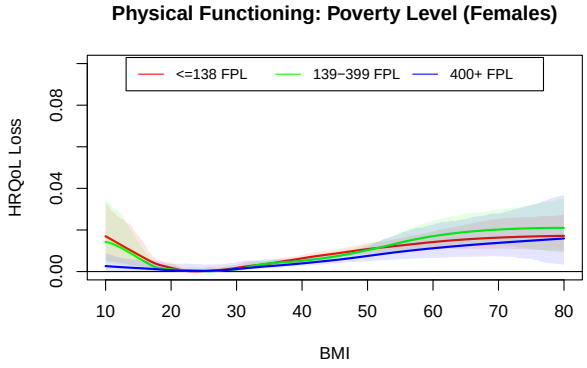

Role Limitations: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

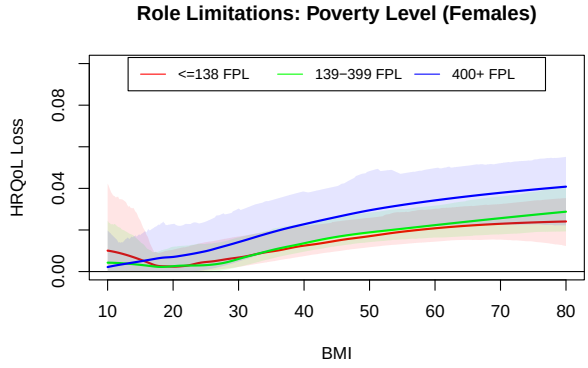

Social Functioning: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

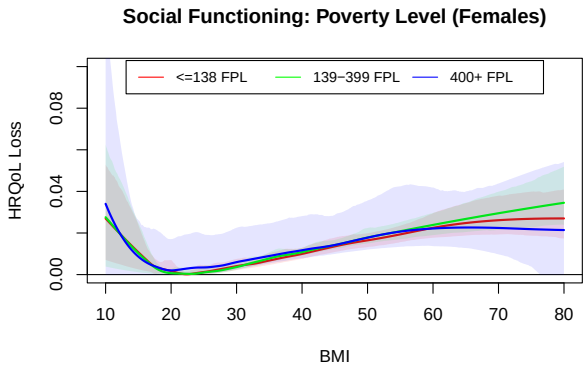

Pain: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

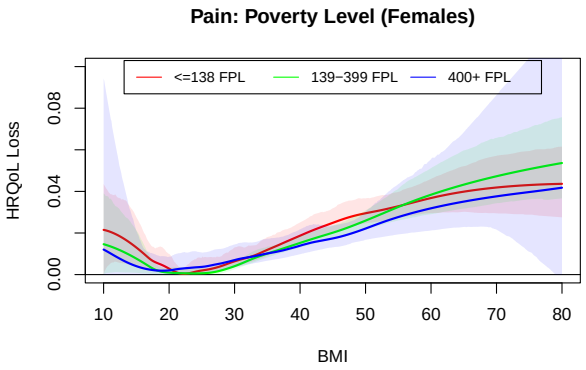

Mental Health: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

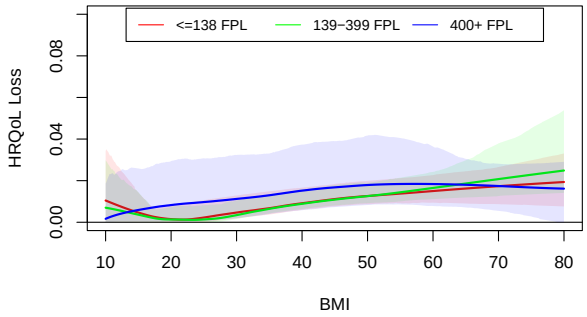

Vitality: Poverty Level (Males)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

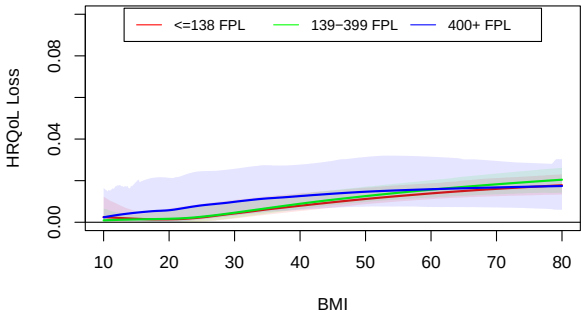

Physical Functioning: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

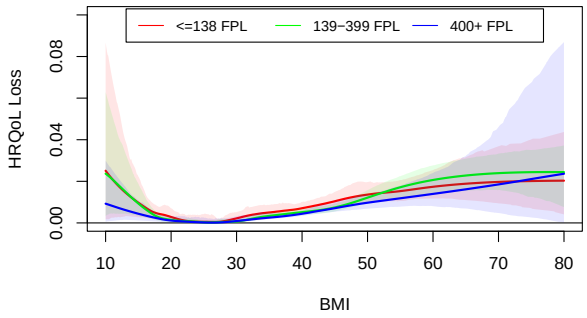

Role Limitations: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

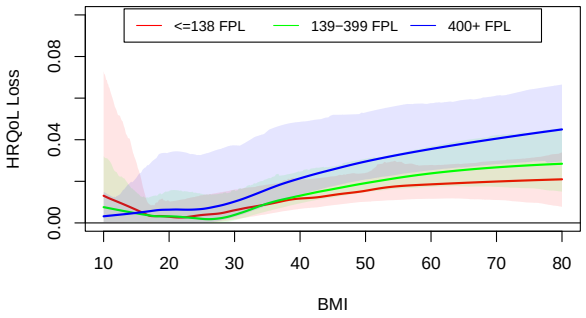

Social Functioning: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

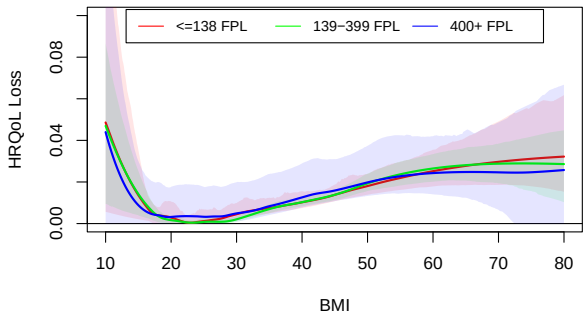

Pain: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

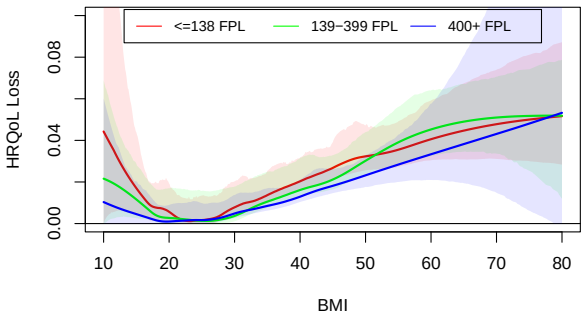

Mental Health: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

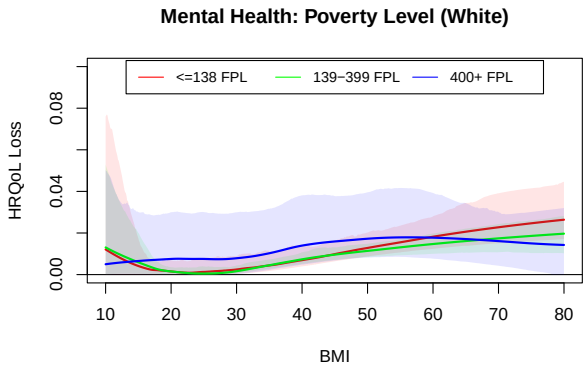

Vitality: Poverty Level (Females)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

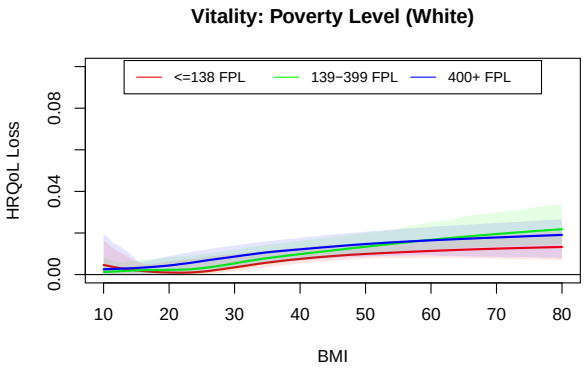

Physical Functioning: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

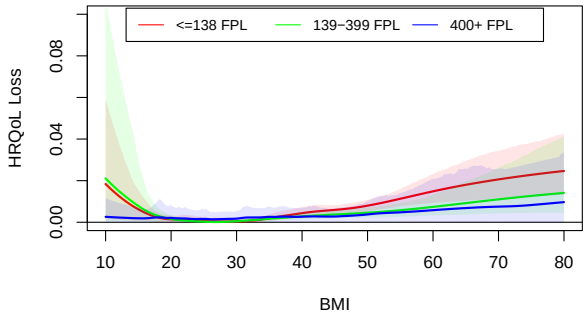

Role Limitations: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

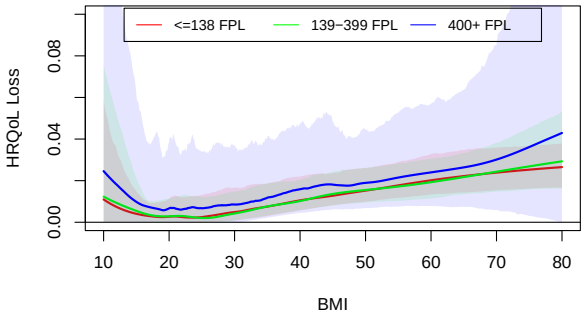

Social Functioning: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

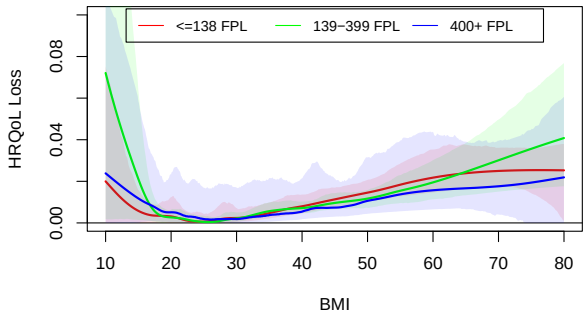

Pain: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

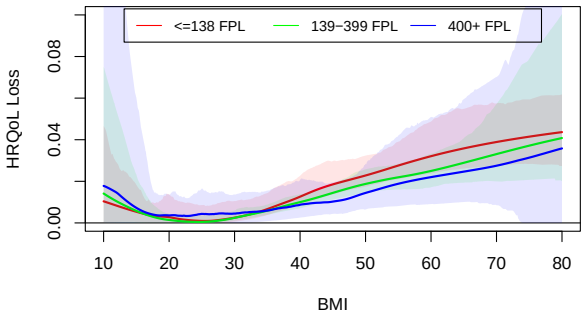

Mental Health: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

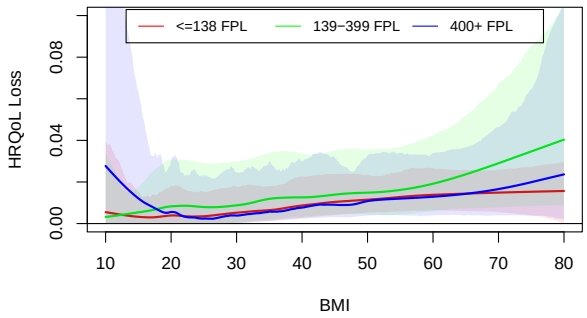

Vitality: Poverty Level (White)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

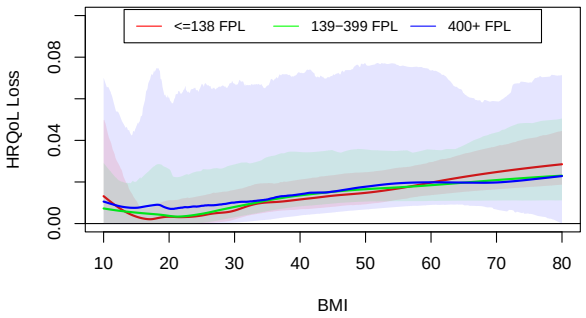

Physical Functioning: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

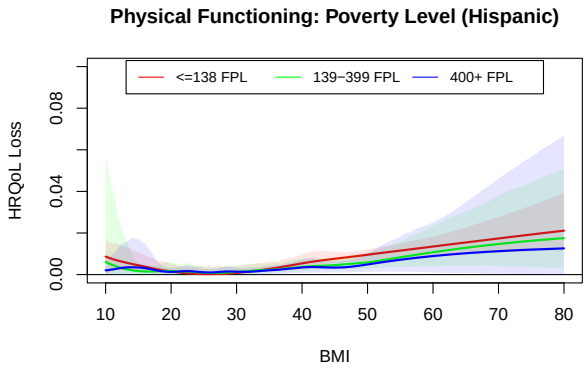

Role Limitations: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

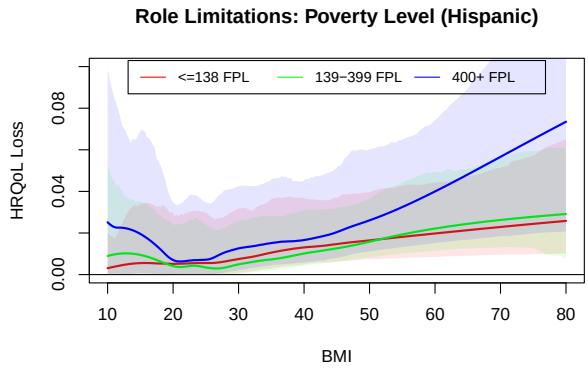

Social Functioning: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

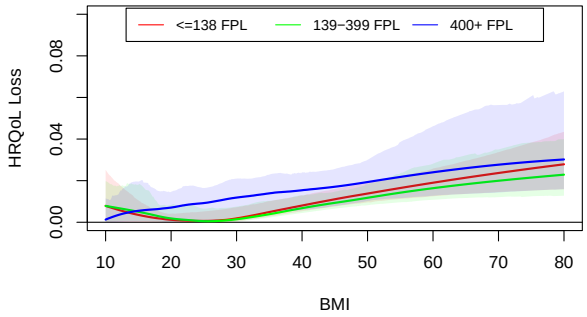

Pain: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

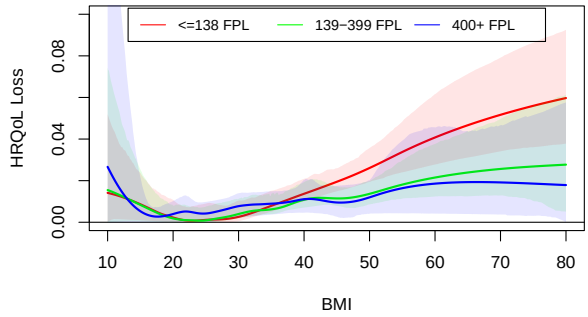

Mental Health: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

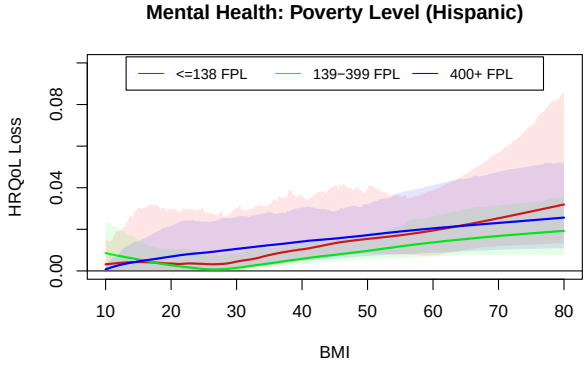

Vitality: Poverty Level (Black)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

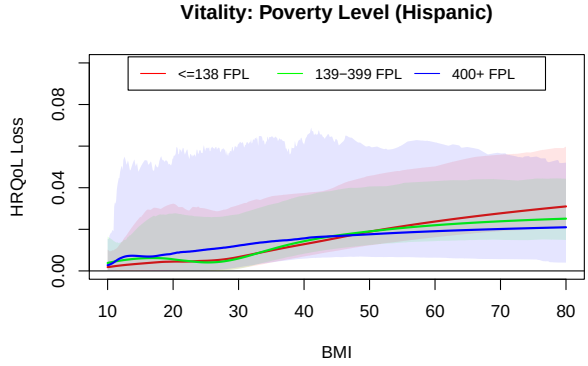

Physical Functioning: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

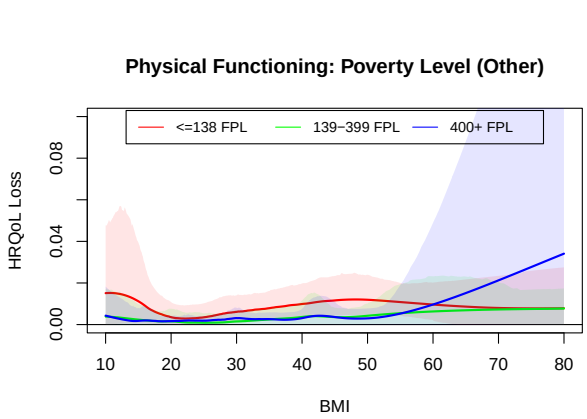

Role Limitations: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

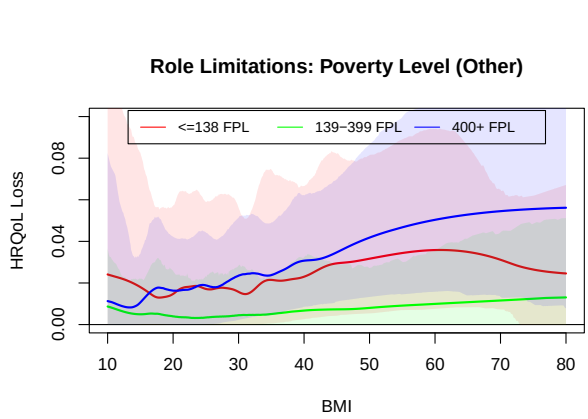

Social Functioning: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Pain: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

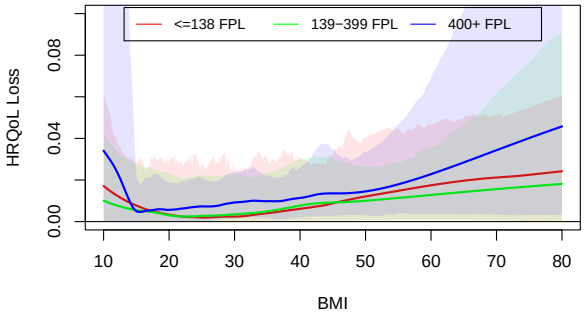

Mental Health: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Vitality: Poverty Level (Hispanic)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

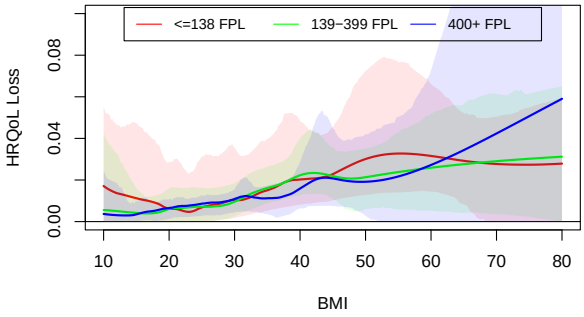

Physical Functioning: Poverty Level (Other)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Role Limitations: Poverty Level (Other)
<=138 FPL
139−399 FPL
400+ FPL
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

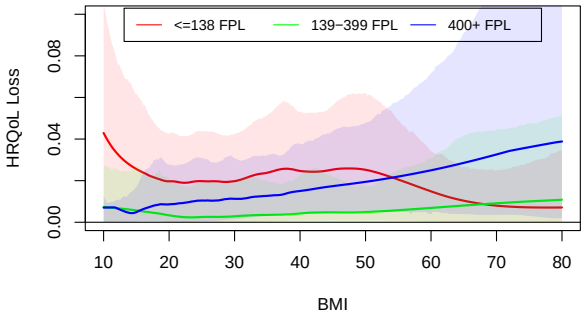
**Social Functioning: Poverty Level (Other)**



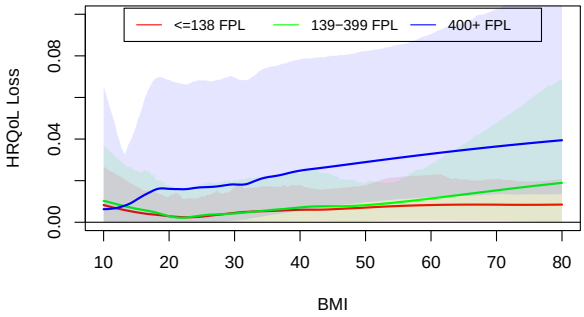

**Pain: Poverty Level (Other)**



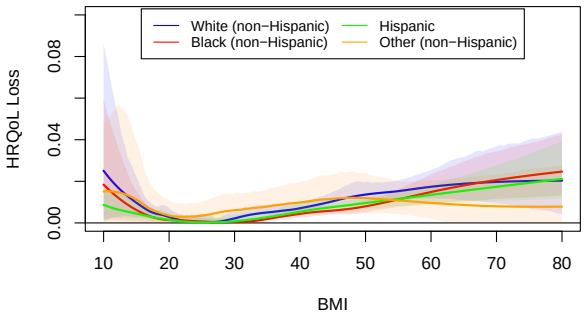

**Mental Health: Poverty Level (Other)**



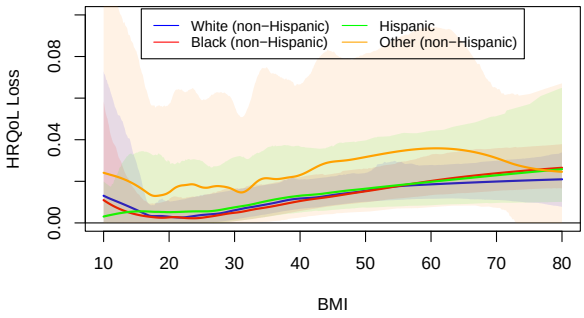

**Vitality: Poverty Level (Other)**



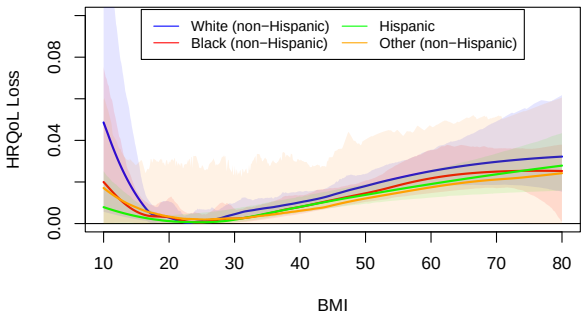

**Physical Functioning: Race/Ethnicity (FPL <=138)**



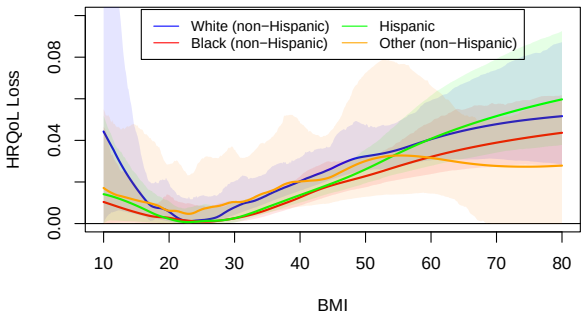

**Role Limitations: Race/Ethnicity (FPL <=138)**



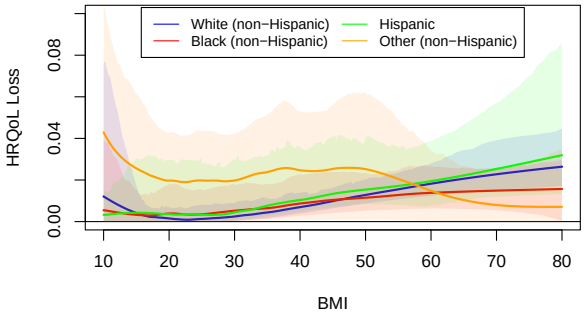

**Social Functioning: Race/Ethnicity (FPL <=138)**



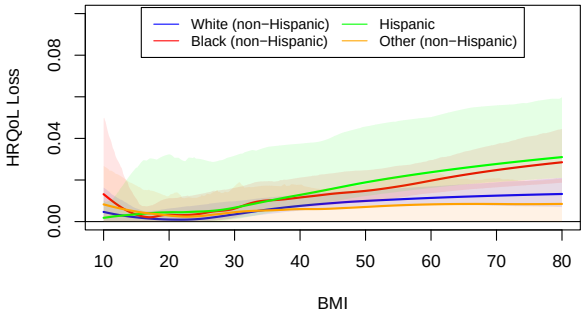

**Pain: Race/Ethnicity (FPL <=138)**



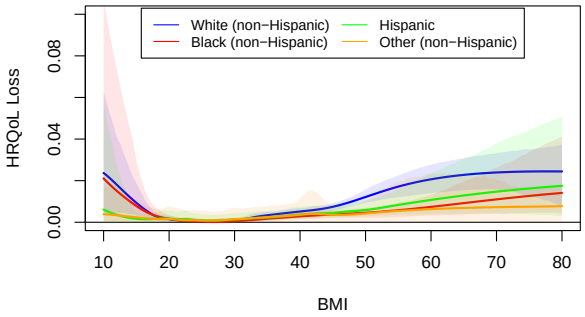
**Mental Health: Race/Ethnicity (FPL <=138)**



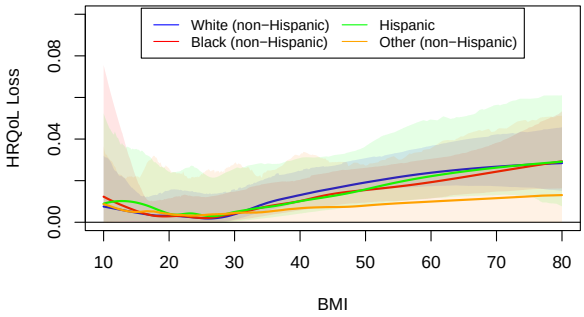

**Vitality: Race/Ethnicity (FPL <=138)**



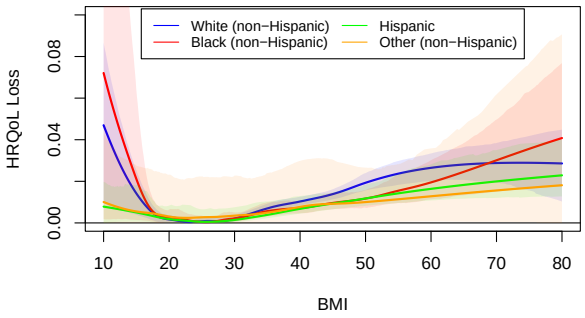

**Physical Functioning: Race/Ethnicity (FPL 139−399)**



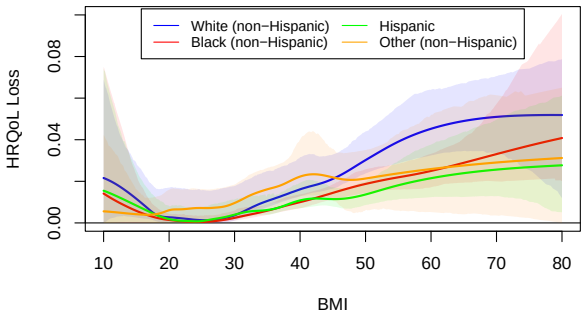

**Role Limitations: Race/Ethnicity (FPL 139−399)**



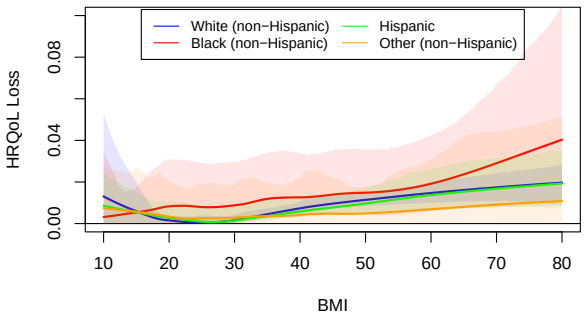

**Social Functioning: Race/Ethnicity (FPL 139−399)**



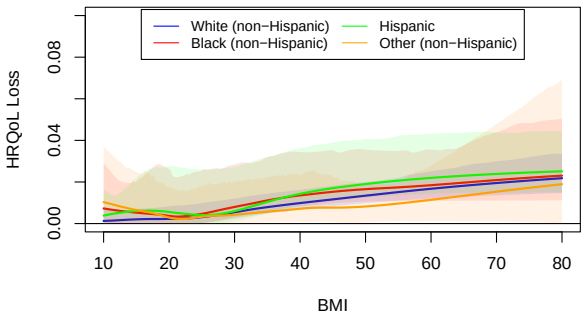

**Pain: Race/Ethnicity (FPL 139−399)**

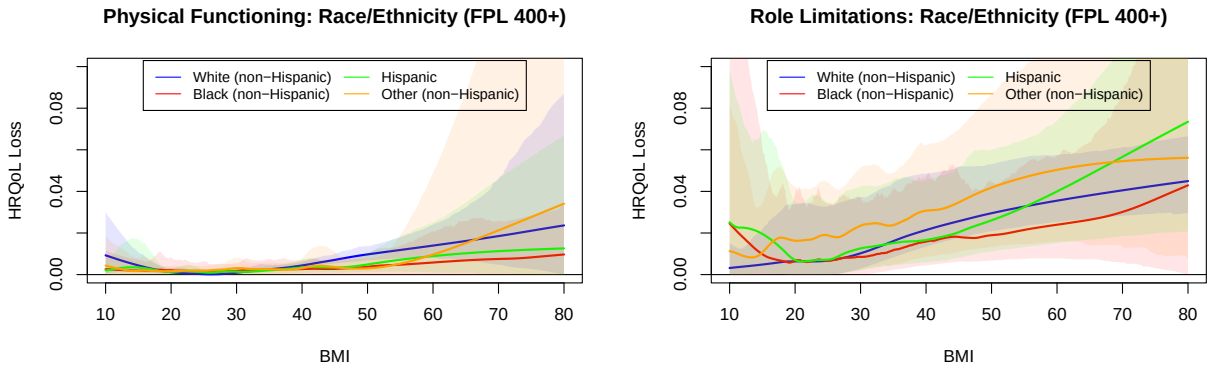



**Mental Health: Race/Ethnicity (FPL 139−399)**

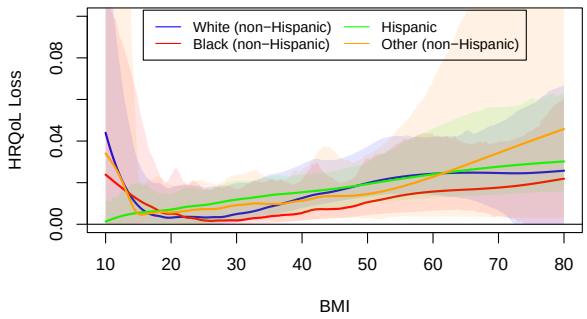


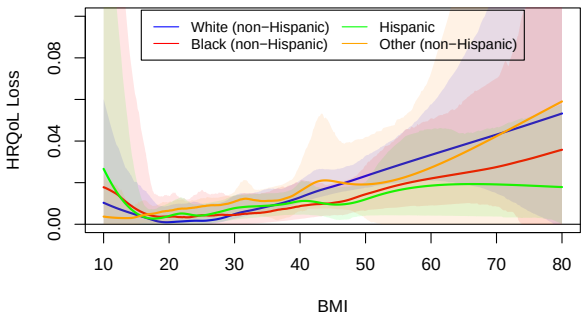

**Vitality: Race/Ethnicity (FPL 139−399)**

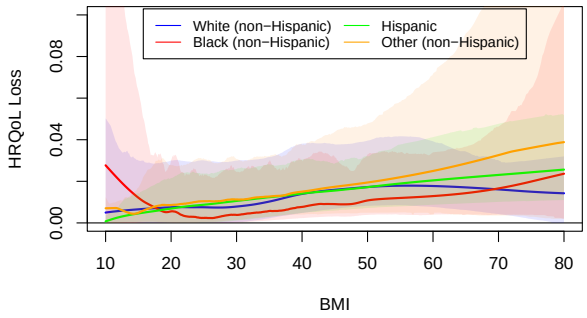


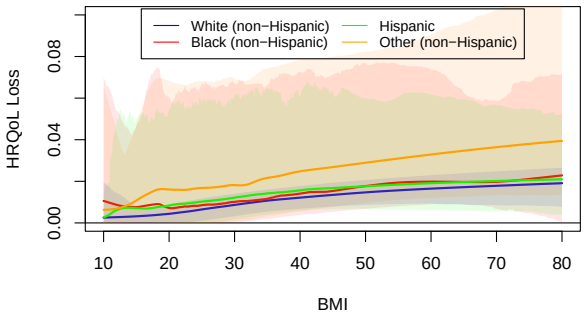

Physical Functioning: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Role Limitations: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

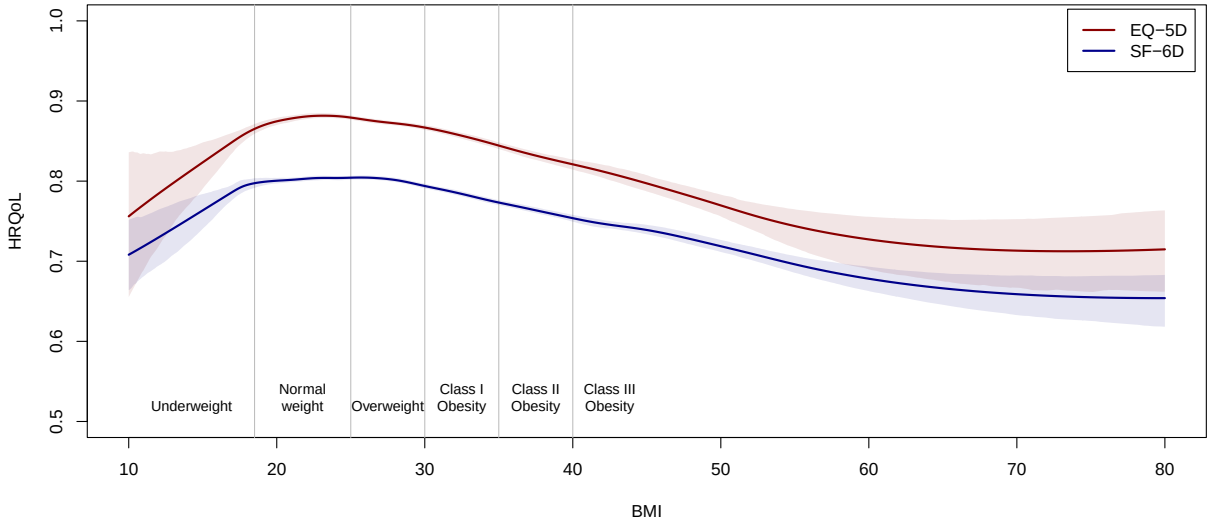

Social Functioning: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

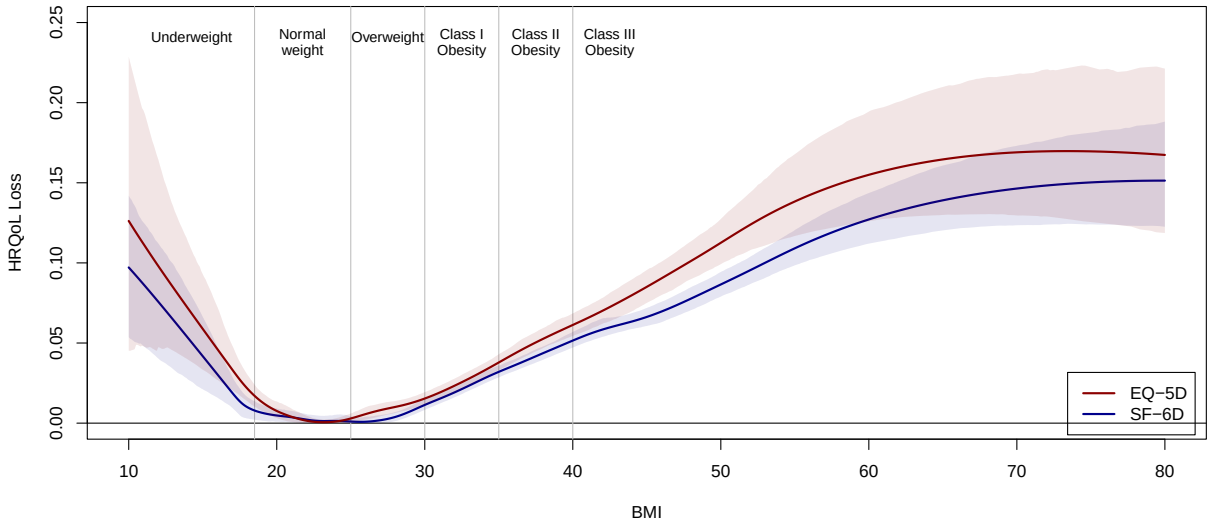

Pain: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Mental Health: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI


Vitality: Race/Ethnicity (FPL 400+)
White (non−Hispanic)
Black (non−Hispanic)
Hispanic
Other (non−Hispanic)
HRQoL Loss
0.00
0.04
0.08
10
20
30
40
50
60
70
80
BMI

## 6.6 SF-6D vs EQ-5D



## 6.7 Self-reported vs Adjusted BMI