***Model Selection (LASSO): MMSE Outcome***
***Analysis Dataset (EXCLUDE=0)***

| *N_Analysis* |
|---|
| 663 |

***Model Selection (LASSO): MMSE Outcome***
***Reference: Full Model Fit (GLM)***

***The GLM Procedure***

*Class Level Information*

| *Class* | *Levels* | *Values* |
|---|---|---|
| *educg* | 4 | <8 years >=8 years, no HS HS, no college Some college+ |

| | |
|---|---|
| *Number of Observations Read* | 663 |
| *Number of Observations Used* | 589 |

***Model Selection (LASSO): MMSE Outcome***
***Reference: Full Model Fit (GLM)***

***The GLM Procedure***

***Dependent Variable: mmse  Mini-Mental State Examination (0-30)***

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Model | 7 | 573.531912 | 81.933130 | 14.21 | <.0001 |
| Error | 581 | 3349.771993 | 5.765528 | | |
| Corrected Total | 588 | 3923.303905 | | | |

| R-Square | Coeff Var | Root MSE | mmse Mean |
|---|---|---|---|
| 0.146186 | 8.532599 | 2.401151 | 28.14092 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| lhcy | 1 | 56.1437040 | 56.1437040 | 9.74 | 0.0019 |
| age | 1 | 180.2630957 | 180.2630957 | 31.27 | <.0001 |
| male | 1 | 11.1059122 | 11.1059122 | 1.93 | 0.1657 |
| educg | 3 | 322.8667806 | 107.6222602 | 18.67 | <.0001 |
| pkyrs | 1 | 3.1524196 | 3.1524196 | 0.55 | 0.4599 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| lhcy | 1 | 11.2016335 | 11.2016335 | 1.94 | 0.1639 |
| age | 1 | 106.4425589 | 106.4425589 | 18.46 | <.0001 |
| male | 1 | 15.1436120 | 15.1436120 | 2.63 | 0.1056 |
| educg | 3 | 325.0884425 | 108.3628142 | 18.79 | <.0001 |
| pkyrs | 1 | 3.1524196 | 3.1524196 | 0.55 | 0.4599 |

| Parameter | | Estimate | | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|---|
| Intercept | | 37.12601966 | B | 1.72265592 | 21.55 | <.0001 |
| lhcy | | -0.36246629 | | 0.26004380 | -1.39 | 0.1639 |
| age | | -0.09731937 | | 0.02264963 | -4.30 | <.0001 |
| male | | -0.35722553 | | 0.22041813 | -1.62 | 0.1056 |
| educg | <8 years | -3.48474511 | B | 0.61230286 | -5.69 | <.0001 |
| educg | >=8 years, no HS | -1.51960800 | B | 0.26149099 | -5.81 | <.0001 |
| educg | HS, no college | -0.54168481 | B | 0.23861512 | -2.27 | 0.0236 |
| educg | Some college+ | 0.00000000 | B | . | . | . |
| pkyrs | | 0.00361209 | | 0.00488490 | 0.74 | 0.4599 |

**Note:** The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***

| | |
|---|---|
| *Data Set* | WORK.ANA |
| *Dependent Variable* | mmse |
| *Selection Method* | LASSO |
| *Stop Criterion* | None |
| *Choose Criterion* | SBC |
| *Effect Hierarchy Enforced* | None |

| | |
|---|---|
| *Number of Observations Read* | 663 |
| *Number of Observations Used* | 589 |

*Class Level Information*

| *Class* | *Levels* | *Values* |
|---|---|---|
| *educg* | 4 | <8 years >=8 years, no HS HS, no college Some college+ |
| *male* | 2 | Female Male |

| *Dimensions* | |
|---|---|
| *Number of Effects* | 6 |
| *Number of Effects after Splits* | 10 |
| *Number of Parameters* | 10 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 0***

***Effect Entered: Intercept***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 0 | 0 | . | . |
| *Error* | 588 | 3923.30390 | 6.67229 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.58308 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.0000 |
| *Adj R-Sq* | 0.0000 |
| *AIC* | 1709.89904 |
| *AICC* | 1709.91952 |
| *BIC* | 1120.59404 |
| *C(p)* | 93.47604 |
| *SBC* | 1123.27747 |
| *ASE* | 6.66096 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 28.140917 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 1***

***Effect Entered: age***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 1 | 1.49560 | 1.49560 | 0.22 |
| *Error* | 587 | 3921.80830 | 6.68110 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.58478 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.0004 |
| *Adj R-Sq* | -.0013 |
| *AIC* | 1711.67446 |
| *AICC* | 1711.71549 |
| *BIC* | 1122.10210 |
| *C(p)* | 95.21663 |
| *SBC* | 1129.43132 |
| *ASE* | 6.65842 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 28.175916 |
| *age* | 1 | -0.000465 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 2***

***Effect Entered: educg_>=8 years, no HS***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 2 | 101.92257 | 50.96129 | 7.81 |
| *Error* | 586 | 3821.38133 | 6.52113 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.55365 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.0260 |
| *Adj R-Sq* | 0.0227 |
| *AIC* | 1698.39528 |
| *AICC* | 1698.46378 |
| *BIC* | 1108.70243 |
| *C(p)* | 79.79811 |
| *SBC* | 1120.53056 |
| *ASE* | 6.48791 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 29.499849 |
| *age* | 1 | -0.017424 |
| *educg_>=8 years, no HS* | 1 | -0.173866 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 3***

***Effect Entered: educg_<8 years***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 3 | 136.03614 | 45.34538 | 7.00 |
| *Error* | 585 | 3787.26776 | 6.47396 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.54440 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.0347 |
| *Adj R-Sq* | 0.0297 |
| *AIC* | 1695.11365 |
| *AICC* | 1695.21657 |
| *BIC* | 1105.26559 |
| *C(p)* | 75.88130 |
| *SBC* | 1121.62736 |
| *ASE* | 6.43000 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 29.775537 |
| *age* | 1 | -0.020868 |
| *educg_<8 years* | 1 | -0.133908 |
| *educg_>=8 years, no HS* | 1 | -0.220038 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 4***

***Effect Entered: educg_Some college+***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 4 | 477.47998 | 119.36999 | 20.23 |
| *Error* | 584 | 3445.82393 | 5.90038 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.42907 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.1217 |
| *Adj R-Sq* | 0.1157 |
| *AIC* | 1641.46387 |
| *AICC* | 1641.60820 |
| *BIC* | 1052.31856 |
| *C(p)* | 18.65969 |
| *SBC* | 1072.35600 |
| *ASE* | 5.85030 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 33.445885 |
| *age* | 1 | -0.068761 |
| *educg_<8 years* | 1 | -1.767345 |
| *educg_>=8 years, no HS* | 1 | -0.680227 |
| *educg_Some college+* | 1 | 0.332500 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 5***

***Effect Entered: lhcy***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 5 | 516.47894 | 103.29579 | 17.68 |
| *Error* | 583 | 3406.82496 | 5.84361 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.41736 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.1316 |
| *Adj R-Sq* | 0.1242 |
| *AIC* | 1636.75971 |
| *AICC* | 1636.95248 |
| *BIC* | 1047.72119 |
| *C(p)* | 13.89553 |
| *SBC* | 1072.03026 |
| *ASE* | 5.78408 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 34.307963 |
| *lhcy* | 1 | -0.104768 |
| *age* | 1 | -0.076657 |
| *educg_<8 years* | 1 | -2.082124 |
| *educg_>=8 years, no HS* | 1 | -0.766767 |
| *educg_Some college+* | 1 | 0.390426 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 6***

***Effect Entered: male_Female***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 6 | 563.25083 | 93.87514 | 16.26 |
| *Error* | 582 | 3360.05308 | 5.77329 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.40277 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.1436 |
| *Adj R-Sq* | 0.1347 |
| *AIC* | 1630.61737 |
| *AICC* | 1630.86565 |
| *BIC* | 1041.76649 |
| *C(p)* | 7.78320 |
| *SBC* | 1070.26636 |
| *ASE* | 5.70467 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 35.636968 |
| *lhcy* | 1 | -0.259606 |
| *age* | 1 | -0.090798 |
| *male_Female* | 1 | 0.196668 |
| *educg_<8 years* | 1 | -2.608070 |
| *educg_>=8 years, no HS* | 1 | -0.901194 |
| *educg_Some college+* | 1 | 0.487233 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***LASSO Selection Step: 7***

***Effect Entered: pkyrs***

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 7 | 573.53191 | 81.93313 | 14.21 |
| *Error* | 581 | 3349.77199 | 5.76553 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.40115 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.1462 |
| *Adj R-Sq* | 0.1359 |
| *AIC* | 1630.81239 |
| *AICC* | 1631.12327 |
| *BIC* | 1042.03232 |
| *C(p)* | 8.00000 |
| *SBC* | 1074.83980 |
| *ASE* | 5.68722 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 36.227109 |
| *lhcy* | 1 | -0.362466 |
| *age* | 1 | -0.097319 |
| *male_Female* | 1 | 0.357226 |
| *educg_<8 years* | 1 | -2.943060 |
| *educg_>=8 years, no HS* | 1 | -0.977923 |
| *educg_Some college+* | 1 | 0.541685 |
| *pkyrs* | 1 | 0.003612 |

***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***

*LASSO Selection Summary*

| Step | Effect Entered | Effect Removed | Number Effects In | Model R-Square | Adjusted R-Square | AIC | AICC | BIC | CP | SBC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Intercept | | 1 | 0.0000 | 0.0000 | 1709.8990 | 1709.9195 | 1120.5940 | 93.4760 | 1123.2775 |
| 1 | age | | 2 | 0.0004 | -.0013 | 1711.6745 | 1711.7155 | 1122.1021 | 95.2166 | 1129.4313 |
| 2 | educg_>=8 years, no HS | | 3 | 0.0260 | 0.0227 | 1698.3953 | 1698.4638 | 1108.7024 | 79.7981 | 1120.5306 |
| 3 | educg_<8 years | | 4 | 0.0347 | 0.0297 | 1695.1137 | 1695.2166 | 1105.2656 | 75.8813 | 1121.6274 |
| 4 | educg_Some college+ | | 5 | 0.1217 | 0.1157 | 1641.4639 | 1641.6082 | 1052.3186 | 18.6597 | 1072.3560 |
| 5 | lhcy | | 6 | 0.1316 | 0.1242 | 1636.7597 | 1636.9525 | 1047.7212 | 13.8955 | 1072.0303 |
| 6 | male_Female | | 7 | 0.1436 | 0.1347 | 1630.6174* | 1630.8657* | 1041.7665* | 7.7832* | 1070.2664* |
| 7 | pkyrs | | 8 | 0.1462 | 0.1359* | 1630.8124 | 1631.1233 | 1042.0323 | 8.0000 | 1074.8398 |

** Optimal Value of Criterion*

*LASSO Selection Summary*

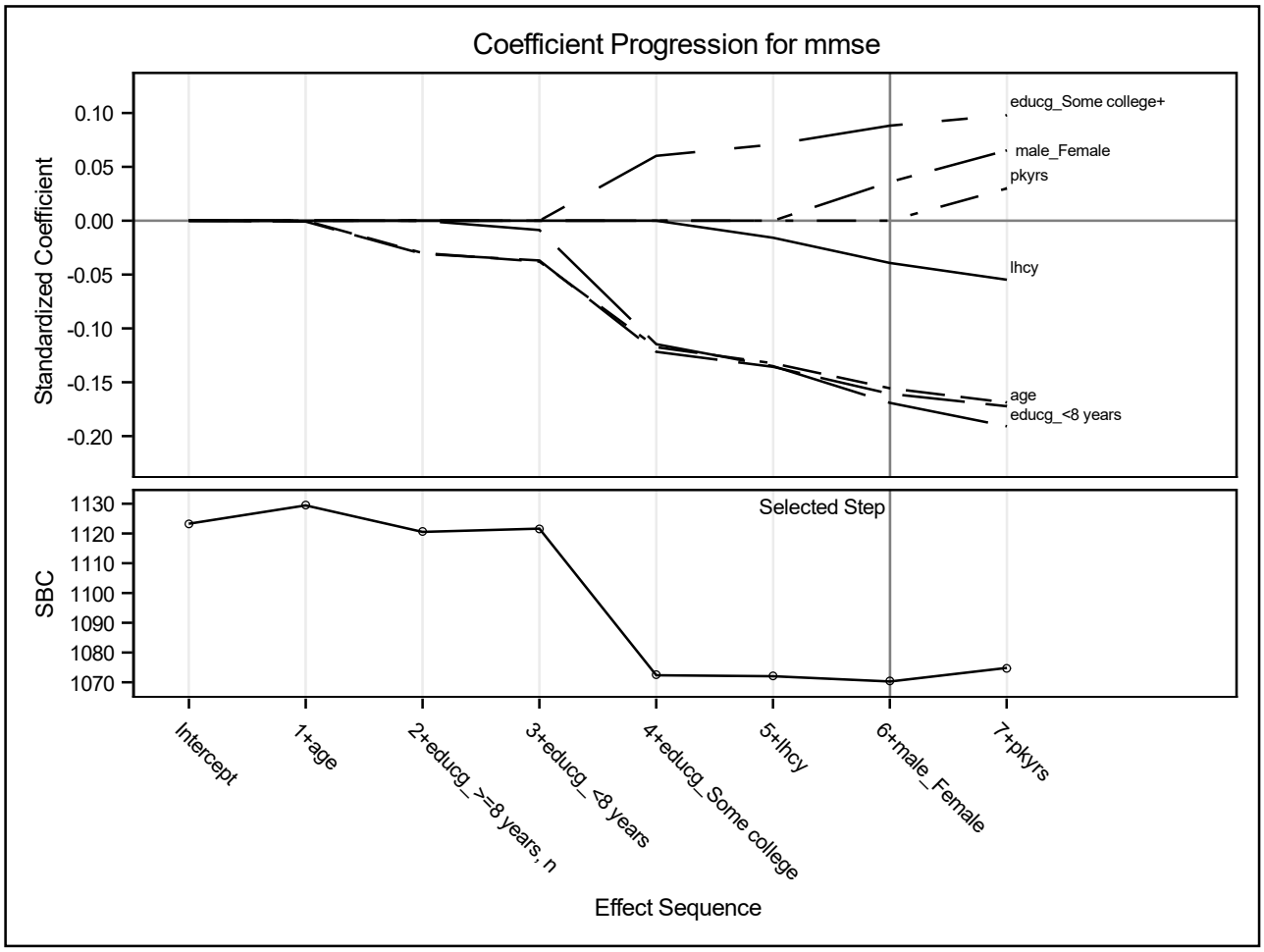
| Step | Effect Entered | Effect Removed | ASE | F Value | Pr > F |
|---|---|---|---|---|---|
| 0 | Intercept | | 6.6610 | 0.00 | 1.0000 |
| 1 | age | | 6.6584 | 0.22 | 0.6363 |
| 2 | educg_>=8 years, no HS | | 6.4879 | 15.40 | <.0001 |
| 3 | educg_<8 years | | 6.4300 | 5.27 | 0.0221 |
| 4 | educg_Some college+ | | 5.8503 | 57.87 | <.0001 |
| 5 | lhcy | | 5.7841 | 6.67 | 0.0100 |
| 6 | male_Female | | 5.7047 | 8.10 | 0.0046 |
| 7 | pkyrs | | 5.6872 | 1.78 | 0.1823 |

** Optimal Value of Criterion*

Selection stopped because the change of the maximum absolute correction is tiny.

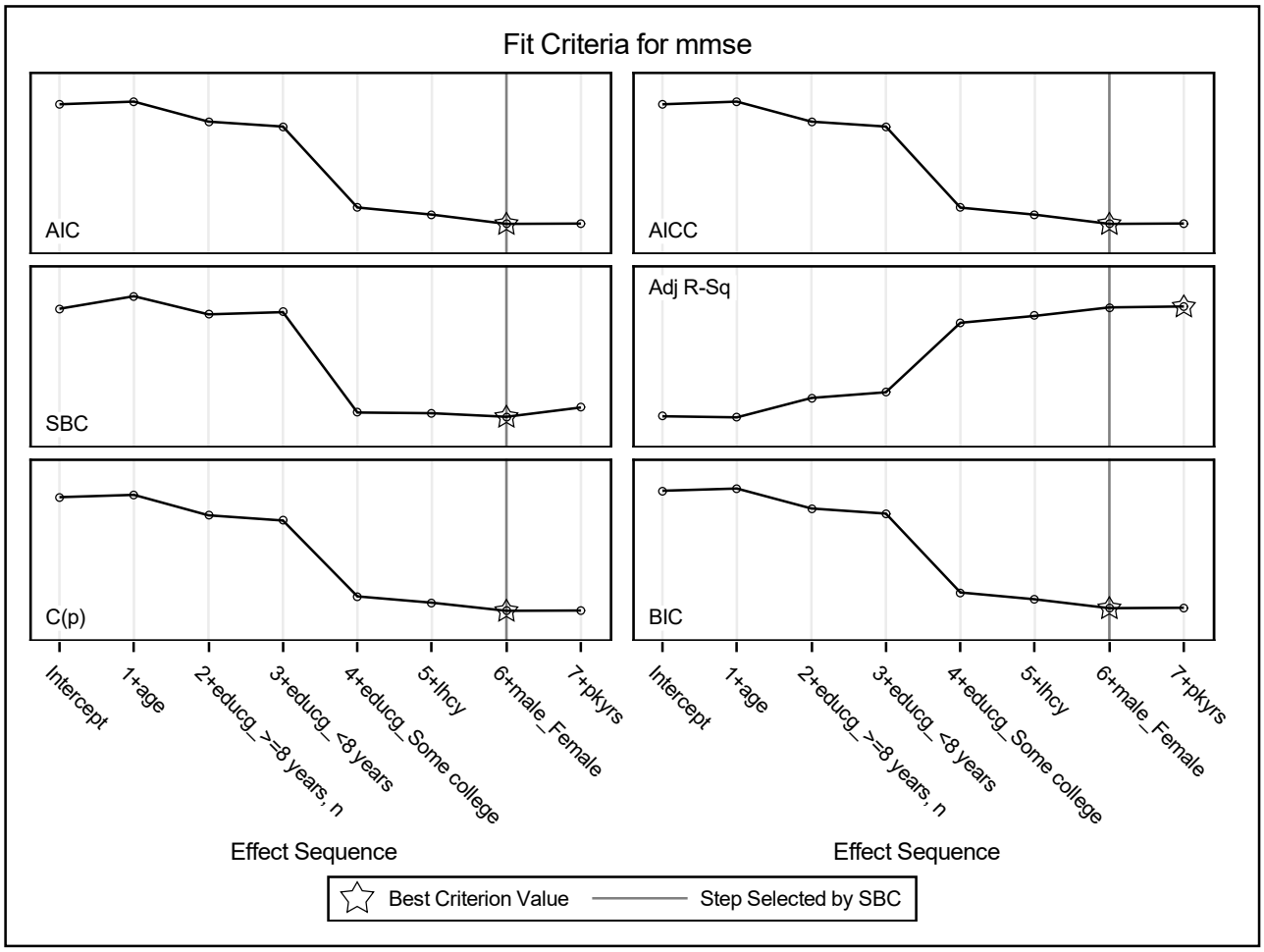
***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***



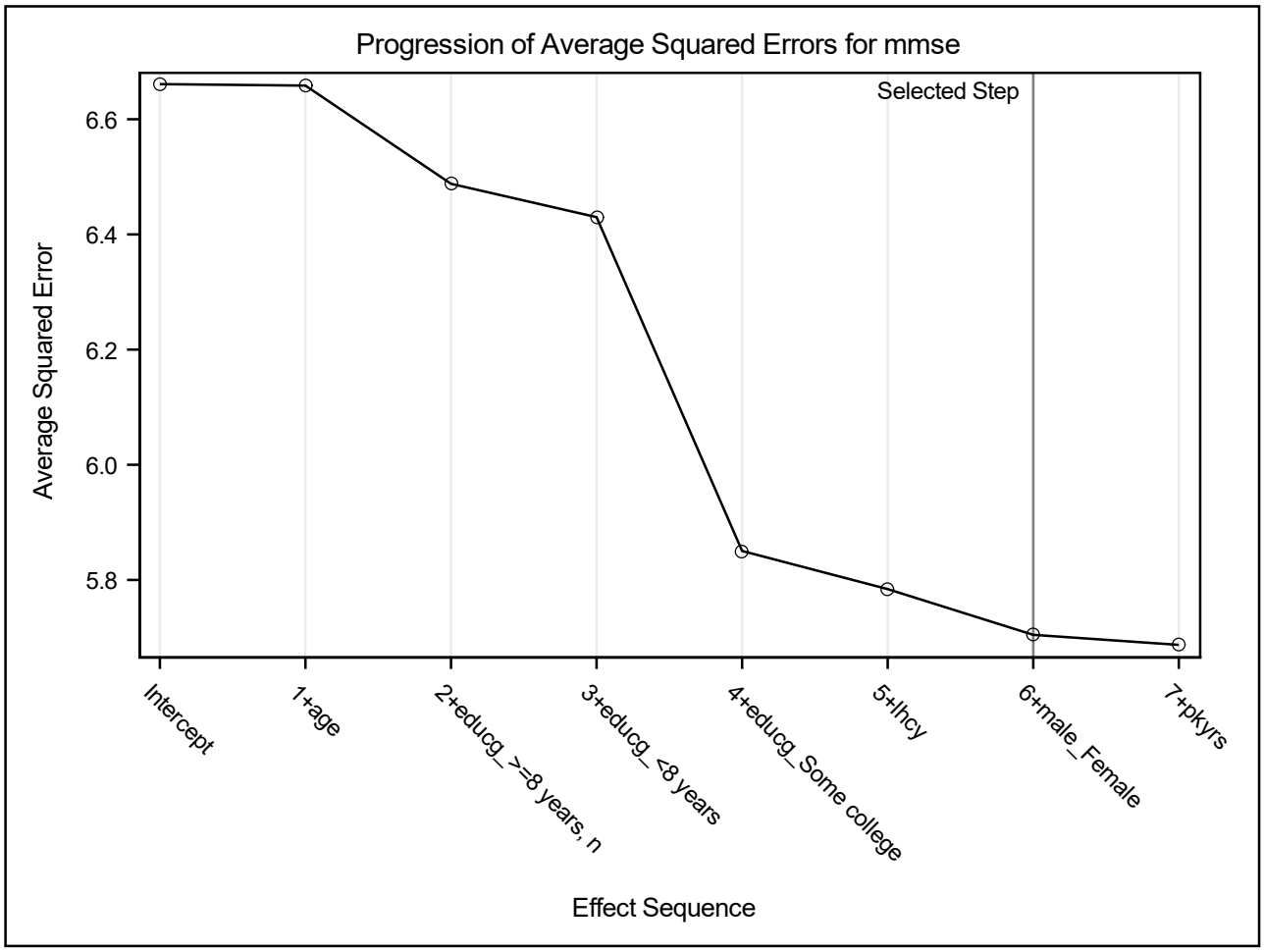
***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***



***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***



***Model Selection (LASSO): MMSE Outcome***
***LASSO Selection Using SBC (BIC): Candidate Predictors***
***Candidates: LHCY, AGE, MALE, EDUCG (categorical), PKYRS***

***The GLMSELECT Procedure***
***Selected Model***

***The selected model, based on SBC, is the model at Step 6.***

*Effects:* Intercept lhcy age male_Female educg_<8 years educg_>=8 years, no HS educg_Some college+

*Analysis of Variance*

| *Source* | *DF* | *Sum of Squares* | *Mean Square* | *F Value* |
|---|---|---|---|---|
| *Model* | 6 | 563.25083 | 93.87514 | 16.26 |
| *Error* | 582 | 3360.05308 | 5.77329 | |
| *Corrected Total* | 588 | 3923.30390 | | |

| | |
|---|---|
| *Root MSE* | 2.40277 |
| *Dependent Mean* | 28.14092 |
| *R-Square* | 0.1436 |
| *Adj R-Sq* | 0.1347 |
| *AIC* | 1630.61737 |
| *AICC* | 1630.86565 |
| *BIC* | 1041.76649 |
| *C(p)* | 7.78320 |
| *SBC* | 1070.26636 |
| *ASE* | 5.70467 |

*Parameter Estimates*

| *Parameter* | *DF* | *Estimate* |
|---|---|---|
| *Intercept* | 1 | 35.636968 |
| *lhcy* | 1 | -0.259606 |
| *age* | 1 | -0.090798 |
| *male_Female* | 1 | 0.196668 |
| *educg_<8 years* | 1 | -2.608070 |
| *educg_>=8 years, no HS* | 1 | -0.901194 |
| *educg_Some college+* | 1 | 0.487233 |

***Model Selection (LASSO): MMSE Outcome***
***Selected Effects (Final LASSO Model)***

| *Label* | *Effects* |
|---|---|
| Effects: | Intercept lhcy age male_Female educg_<8 years educg_>=8 years, no HS educg_Some college+ |

***Model Selection (LASSO): MMSE Outcome***
***Selection Summary (Path + SBC)***

| *Step* | *StepLabel* | *EffectEntered* | *EffectRemoved* | *nEffectsIn* | *nParmsIn* | *RSquare* | *AdjRSq* | *OptAdjRSq* | *AIC* | *OptAIC* |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Intercept | Intercept | | 1 | 1 | 0.0000 | 0.0000 | 0 | 1709.8990 | 0 |
| 1 | 1+age | age | | 2 | 2 | 0.0004 | -.0013 | 0 | 1711.6745 | 0 |
| 2 | 2+educg_>=8 years, n | educg_>=8 years, no HS | | 3 | 3 | 0.0260 | 0.0227 | 0 | 1698.3953 | 0 |
| 3 | 3+educg_<8 years | educg_<8 years | | 4 | 4 | 0.0347 | 0.0297 | 0 | 1695.1137 | 0 |
| 4 | 4+educg_Some college | educg_Some college+ | | 5 | 5 | 0.1217 | 0.1157 | 0 | 1641.4639 | 0 |
| 5 | 5+lhcy | lhcy | | 6 | 6 | 0.1316 | 0.1242 | 0 | 1636.7597 | 0 |
| 6 | 6+male_Female | male_Female | | 7 | 7 | 0.1436 | 0.1347 | 0 | 1630.6174 | 1 |
| 7 | 7+pkyrs | pkyrs | | 8 | 8 | 0.1462 | 0.1359 | 1 | 1630.8124 | 0 |

| *AICC* | *OptAICC* | *BIC* | *OptBIC* | *CP* | *OptCP* | *SBC* | *OptSBC* | *FValue* | *ProbF* | *ASE* | *Control* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1709.9195 | 0 | 1120.5940 | 0 | 93.4760 | 0 | 1123.2775 | 0 | 0.00 | 1.0000 | 6.6610 | |
| 1711.7155 | 0 | 1122.1021 | 0 | 95.2166 | 0 | 1129.4313 | 0 | 0.22 | 0.6363 | 6.6584 | - |
| 1698.4638 | 0 | 1108.7024 | 0 | 79.7981 | 0 | 1120.5306 | 0 | 15.40 | <.0001 | 6.4879 | |
| 1695.2166 | 0 | 1105.2656 | 0 | 75.8813 | 0 | 1121.6274 | 0 | 5.27 | 0.0221 | 6.4300 | |
| 1641.6082 | 0 | 1052.3186 | 0 | 18.6597 | 0 | 1072.3560 | 0 | 57.87 | <.0001 | 5.8503 | |
| 1636.9525 | 0 | 1047.7212 | 0 | 13.8955 | 0 | 1072.0303 | 0 | 6.67 | 0.0100 | 5.7841 | |
| 1630.8657 | 1 | 1041.7665 | 1 | 7.7832 | 1 | 1070.2664 | 1 | 8.10 | 0.0046 | 5.7047 | |
| 1631.1233 | 0 | 1042.0323 | 0 | 8.0000 | 0 | 1074.8398 | 0 | 1.78 | 0.1823 | 5.6872 | |

***Model Selection (LASSO): MMSE Outcome***
***Final LASSO Model Parameter Estimates***

| *Step* | *Effect* | *Parameter* | *DF* | *Estimate* | *Standardized Estimate* | *Education category (1-4)* | *Sex (1=Male,0=Female)* |
|---|---|---|---|---|---|---|---|
| 0 | Intercept | Intercept | 1 | 28.140917 | 0.00000 | . | . |
| 1 | Intercept | Intercept | 1 | 28.175916 | 0.00000 | . | . |
| 1 | age | age | 1 | -0.000465 | -0.00082 | . | . |
| 2 | Intercept | Intercept | 1 | 29.499849 | 0.00000 | _ | . |
| 2 | age | age | 1 | -0.017424 | -0.03085 | _ | . |
| 2 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.173866 | -0.03002 | >=8 years, no HS | . |
| 3 | Intercept | Intercept | 1 | 29.775537 | 0.00000 | _ | . |
| 3 | age | age | 1 | -0.020868 | -0.03694 | _ | . |
| 3 | educg_<8 years | educg_<8 years | 1 | -0.133908 | -0.00869 | <8 years | . |
| 3 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.220038 | -0.03800 | >=8 years, no HS | . |
| 4 | Intercept | Intercept | 1 | 33.445885 | 0.00000 | _ | . |
| 4 | age | age | 1 | -0.068761 | -0.12173 | _ | . |
| 4 | educg_<8 years | educg_<8 years | 1 | -1.767345 | -0.11465 | <8 years | . |
| 4 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.680227 | -0.11746 | >=8 years, no HS | . |
| 4 | educg_Some college+ | educg_Some college+ | 1 | 0.332500 | 0.06022 | Some college+ | . |
| 5 | Intercept | Intercept | 1 | 34.307963 | 0.00000 | _ | . |
| 5 | lhcy | lhcy | 1 | -0.104768 | -0.01584 | _ | . |
| 5 | age | age | 1 | -0.076657 | -0.13571 | _ | . |
| 5 | educg_<8 years | educg_<8 years | 1 | -2.082124 | -0.13507 | <8 years | . |
| 5 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.766767 | -0.13241 | >=8 years, no HS | . |
| 5 | educg_Some college+ | educg_Some college+ | 1 | 0.390426 | 0.07072 | Some college+ | . |
| 6 | Intercept | Intercept | 1 | 35.636968 | 0.00000 | _ | _ |
| 6 | lhcy | lhcy | 1 | -0.259606 | -0.03926 | _ | _ |
| 6 | age | age | 1 | -0.090798 | -0.16075 | _ | _ |
| 6 | male_Female | male_Female | 1 | 0.196668 | 0.03595 | _ | Female |
| 6 | educg_<8 years | educg_<8 years | 1 | -2.608070 | -0.16918 | <8 years | _ |
| 6 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.901194 | -0.15562 | >=8 years, no HS | _ |
| 6 | educg_Some college+ | educg_Some college+ | 1 | 0.487233 | 0.08825 | Some college+ | _ |
| 7 | Intercept | Intercept | 1 | 36.227109 | 0.00000 | _ | _ |
| 7 | lhcy | lhcy | 1 | -0.362466 | -0.05482 | _ | _ |
| 7 | age | age | 1 | -0.097319 | -0.17229 | _ | _ |
| 7 | male_Female | male_Female | 1 | 0.357226 | 0.06530 | _ | Female |
| 7 | educg_<8 years | educg_<8 years | 1 | -2.943060 | -0.19091 | <8 years | _ |
| 7 | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.977923 | -0.16887 | >=8 years, no HS | _ |
| 7 | educg_Some college+ | educg_Some college+ | 1 | 0.541685 | 0.09811 | Some college+ | _ |
| 7 | pkyrs | pkyrs | 1 | 0.003612 | 0.02998 | _ | _ |
| . | Intercept | Intercept | 1 | 35.636968 | 0.00000 | _ | _ |
| . | lhcy | lhcy | 1 | -0.259606 | -0.03926 | _ | _ |
| . | age | age | 1 | -0.090798 | -0.16075 | _ | _ |
| . | male_Female | male_Female | 1 | 0.196668 | 0.03595 | _ | Female |

***Model Selection (LASSO): MMSE Outcome***
***Final LASSO Model Parameter Estimates***

| *Step* | *Effect* | *Parameter* | *DF* | *Estimate* | *Standardized Estimate* | *Education category (1-4)* | *Sex (1=Male,0=Female)* |
|---|---|---|---|---|---|---|---|
| . | educg_<8 years | educg_<8 years | 1 | -2.608070 | -0.16918 | <8 years | _ |
| . | educg_>=8 years, no HS | educg_>=8 years, no HS | 1 | -0.901194 | -0.15562 | >=8 years, no HS | _ |
| . | educg_Some college+ | educg_Some college+ | 1 | 0.487233 | 0.08825 | Some college+ | _ |

***Model Selection (LASSO): MMSE Outcome***
***Model Comparison: Full vs LASSO (Fit Statistics)***

| *Dependent* | *RSquare* | *CV* | *RootMSE* | *DepMean* |
|---|---|---|---|---|
| mmse | 0.146186 | 8.532599 | 2.401151 | 28.14092 |

***Model Selection (LASSO): MMSE Outcome***
***Model Comparison: Full vs LASSO (Fit Statistics)***

| *Step* | *Label1* | *cValue1* | *nValue1* |
|---|---|---|---|
| 0 | Root MSE | 2.58308 | 2.583077 |
| 0 | Dependent Mean | 28.14092 | 28.140917 |
| 0 | R-Square | 0.0000 | 0 |
| 0 | Adj R-Sq | 0.0000 | 0 |
| 0 | AIC | 1709.89904 | 1709.899041 |
| 0 | AICC | 1709.91952 | 1709.919519 |
| 0 | BIC | 1120.59404 | 1120.594039 |
| 0 | C(p) | 93.47604 | 93.476036 |
| 0 | SBC | 1123.27747 | 1123.277467 |
| 0 | ASE | 6.66096 | 6.660957 |
| 1 | Root MSE | 2.58478 | 2.584783 |
| 1 | Dependent Mean | 28.14092 | 28.140917 |
| 1 | R-Square | 0.0004 | 0.000381 |
| 1 | Adj R-Sq | -.0013 | -0.001322 |
| 1 | AIC | 1711.67446 | 1711.674465 |
| 1 | AICC | 1711.71549 | 1711.715491 |
| 1 | BIC | 1122.10210 | 1122.102102 |
| 1 | C(p) | 95.21663 | 95.216632 |
| 1 | SBC | 1129.43132 | 1129.431317 |
| 1 | ASE | 6.65842 | 6.658418 |
| 2 | Root MSE | 2.55365 | 2.553650 |
| 2 | Dependent Mean | 28.14092 | 28.140917 |
| 2 | R-Square | 0.0260 | 0.025979 |
| 2 | Adj R-Sq | 0.0227 | 0.022654 |
| 2 | AIC | 1698.39528 | 1698.395283 |
| 2 | AICC | 1698.46378 | 1698.463776 |
| 2 | BIC | 1108.70243 | 1108.702429 |
| 2 | C(p) | 79.79811 | 79.798113 |
| 2 | SBC | 1120.53056 | 1120.530562 |
| 2 | ASE | 6.48791 | 6.487914 |
| 3 | Root MSE | 2.54440 | 2.544398 |
| 3 | Dependent Mean | 28.14092 | 28.140917 |
| 3 | R-Square | 0.0347 | 0.034674 |
| 3 | Adj R-Sq | 0.0297 | 0.029723 |
| 3 | AIC | 1695.11365 | 1695.113655 |
| 3 | AICC | 1695.21657 | 1695.216571 |
| 3 | BIC | 1105.26559 | 1105.265587 |
| 3 | C(p) | 75.88130 | 75.881296 |
| 3 | SBC | 1121.62736 | 1121.627360 |
| 3 | ASE | 6.43000 | 6.429996 |

***Model Selection (LASSO): MMSE Outcome***
***Model Comparison: Full vs LASSO (Fit Statistics)***

| *Step* | *Label1* | *cValue1* | *nValue1* |
|---|---|---|---|
| 4 | Root MSE | 2.42907 | 2.429070 |
| 4 | Dependent Mean | 28.14092 | 28.140917 |
| 4 | R-Square | 0.1217 | 0.121704 |
| 4 | Adj R-Sq | 0.1157 | 0.115688 |
| 4 | AIC | 1641.46387 | 1641.463869 |
| 4 | AICC | 1641.60820 | 1641.608199 |
| 4 | BIC | 1052.31856 | 1052.318556 |
| 4 | C(p) | 18.65969 | 18.659693 |
| 4 | SBC | 1072.35600 | 1072.356000 |
| 4 | ASE | 5.85030 | 5.850295 |
| 5 | Root MSE | 2.41736 | 2.417356 |
| 5 | Dependent Mean | 28.14092 | 28.140917 |
| 5 | R-Square | 0.1316 | 0.131644 |
| 5 | Adj R-Sq | 0.1242 | 0.124197 |
| 5 | AIC | 1636.75971 | 1636.759705 |
| 5 | AICC | 1636.95248 | 1636.952476 |
| 5 | BIC | 1047.72119 | 1047.721190 |
| 5 | C(p) | 13.89553 | 13.895531 |
| 5 | SBC | 1072.03026 | 1072.030262 |
| 5 | ASE | 5.78408 | 5.784083 |
| 6 | Root MSE | 2.40277 | 2.402767 |
| 6 | Dependent Mean | 28.14092 | 28.140917 |
| 6 | R-Square | 0.1436 | 0.143565 |
| 6 | Adj R-Sq | 0.1347 | 0.134736 |
| 6 | AIC | 1630.61737 | 1630.617375 |
| 6 | AICC | 1630.86565 | 1630.865651 |
| 6 | BIC | 1041.76649 | 1041.766491 |
| 6 | C(p) | 7.78320 | 7.783199 |
| 6 | SBC | 1070.26636 | 1070.266358 |
| 6 | ASE | 5.70467 | 5.704674 |
| 7 | Root MSE | 2.40115 | 2.401151 |
| 7 | Dependent Mean | 28.14092 | 28.140917 |
| 7 | R-Square | 0.1462 | 0.146186 |
| 7 | Adj R-Sq | 0.1359 | 0.135899 |
| 7 | AIC | 1630.81239 | 1630.812391 |
| 7 | AICC | 1631.12327 | 1631.123272 |
| 7 | BIC | 1042.03232 | 1042.032322 |
| 7 | C(p) | 8.00000 | 8.000000 |
| 7 | SBC | 1074.83980 | 1074.839801 |
| 7 | ASE | 5.68722 | 5.687219 |

***Model Selection (LASSO): MMSE Outcome***
***Model Comparison: Full vs LASSO (Fit Statistics)***

| *Step* | *Label1* | *cValue1* | *nValue1* |
|---|---|---|---|
| . | Root MSE | 2.40277 | 2.402767 |
| . | Dependent Mean | 28.14092 | 28.140917 |
| . | R-Square | 0.1436 | 0.143565 |
| . | Adj R-Sq | 0.1347 | 0.134736 |
| . | AIC | 1630.61737 | 1630.617375 |
| . | AICC | 1630.86565 | 1630.865651 |
| . | BIC | 1041.76649 | 1041.766491 |
| . | C(p) | 7.78320 | 7.783199 |
| . | SBC | 1070.26636 | 1070.266358 |
| . | ASE | 5.70467 | 5.704674 |

***Model Selection (LASSO): MMSE Outcome***
***Quick Summary: What LASSO Kept vs Dropped***

| *item* | *status* |
|---|---|
| LHCY | (see Selec |
| AGE | (see Selec |
| MALE | (see Selec |
| EDUCG | (see Selec |
| PKYRS | (see Selec |