**Biostatistics 200B**

**Poster project assignment**

**Overview**: This assignment involves working in a small group (2-3 students) to conduct a data analysis and prepare a poster presenting the results. All projects will use the same data set from the RISE study but each group will use a different dependent variable.

**Important dates:**

* Friday February 23: Deadline for forming your own **groups of 2 or 3**.
  + Send me an email with the members of your group
  + Students who are not part of a group by this time will be organized into groups by the instructor.
* Friday March 1: **Draft results** due for Discussion in class:
  + Table of sample participant characteristics
  + Tables of preliminary model results
  + Bring your questions!
* Friday March 8: **Draft poster** due. Groups will meet with the instructor to discuss their draft poster during Discussion.
  + Bring your questions!
* Friday March 15: **Poster session** during Discussion.
  + Lunch provided!

**Posters**

* There are many good poster templates online.
* Make it visual; try to **use figures and tables** rather than lots of text
* Use the organization
  + Objective
  + Introduction
  + Methods
  + Results
  + Discussion
  + Conclusion
  + References

**Data set**

The data are from the RISE study, which was a longitudinal, observational study of cancer-related fatigue in women diagnosed with breast cancer. Women were eligible for the RISE study if they had been recently diagnosed with stage 0 to stage IIIA breast cancer and had not yet initiated adjuvant or neoadjuvant therapy with radiotherapy, chemotherapy, or endocrine therapy. Primary recruitment sites were the University of California at Los Angeles and Cedars-Sinai Medical Center.

Participants completed assessments at baseline; at the end of treatment (for those who received radiotherapy and/or chemotherapy); and at 6-month, 12-month, and 18-month posttreatment follow-ups. For this project, we will use data from the baseline assessment.

**Research question**

The objective is to identify biobehavioral risk factors associated with your dependent variable in women with early-stage breast cancer before they receive adjuvant therapy (chemotherapy and/or radiation).

The analysis should be modeled roughly on the analysis in Bower et al. (2018), which is posted on the course website. Note that the Bower paper has 4 different dependent variables, but you will only have one dependent variable. Results should include:

* Summary of participant characteristics (in a table)
* Bivariate linear regression results
* Multivariable linear regression results

What variables should be included in the multivariable model?

* In Bower et al. (2018), variables with P<.10 in bivariate analyses were included in the multivariable model.
* You can use this approach but you can also use a different approach. We will discuss some options in class, such as
  + Specify the control variables in advance and keep all of them in the model.
  + Use a model fit index such as AIC/BIC.

**Dependent variables: I will assign one of these dependent variables to each group:**

|  |  |  |
| --- | --- | --- |
| Variable name | Variable | Description |
| CESD\_BL | Center for Epidemiologic Studies – Depression (CES-D) score | Self-reported depression scale. Possible range 0-60, higher score=more depressed |
| PSS\_BL | Perceived Stress Scale | Measure of the perception of stress. It is a measure of the degree to which situations in one’s life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. Possible range 0-40, higher=more perceived stress |
| ISI | Insomnia Severity Index | Measure of the severity of insomnia. Measures both nighttime and daytime components. Possible range 0-28, higher=worse insomnia |
| PSQI | Pittsburgh Sleep Quality Index | Self-rated sleep quality and disturbances over a 1-month time interval. Possible range 0-21, higher=worse sleep |
| SF36-PCS | SF-36 version 1: Physical Component Score | SF-36 is the 36-Item Short Form Health Survey. It is a set of quality-of-life measures. The SF36-PCS is a physical health summary score derived from a subset of the 36 items. Possible range 0 to 100. Higher= better health status. |
| SF36-MCS | SF-36 version 1: Mental Component Score | SF-36 is the 36-Item Short Form Health Survey. It is a set of quality-of-life measures. The SF36-MCS is a mental health summary score derived from a subset of the 36 items. Possible range 0 to 100. Higher= better health status. |
| FSI\_SEVERITY | Fatigue Symptom Inventory severity score | FSI Severity is measured with four items using an 11-point scale (0 = Not at all fatigued to 10 = As fatigued as I could be).  Possible range 0-10, higher=more fatigue |

Predictors: The relationship between the biobehavioral risk factors and the dependent variable is the main focus. The demographic and disease- and treatment-related characteristics are control variables.

|  |  |  |
| --- | --- | --- |
| Variable name | Variable | Description |
| **Demographic characteristics** |  |  |
| AGE\_BL | Age | Age at study enrollment in years |
| RACE5 | Race/ethnicity | 1 = White  2 = Black  3 = Asian  4 = Latina  5 = Other |
| INCOME3 | Annual income | 1 = under $60,000  2 = $60,000-$100,000  3 = $100,000 or more |
| EDUC3 | Education | 1 = at most high school degree  2 = college graduate  3 = post-graduate degree |
| EMPLOY3 | Employment | 1 = full time, 2 = part-time, 3 = not employed. Should be recoded as Employed (full or part time) or not employed. |
| MARRIED2 | Partnered status | 1 = yes, 0 = no |
| **Disease- and treatment-related variables** |  |  |
| STAGEDX\_PG | Cancer stage at diagnosis | Stage = 0, 1, 2, 3, 8;  3 and 8 should be recoded as a “3 or higher” category |
| SURGTYPE\_ENROLLMENT | Breast cancer surgery type before enrollment in study | 0 = no surgery before enrollment  1 = lumpectomy  2, 3, 4 = mastectomy (these categories should be combined into a single mastectomy category) |
| **Biobehavioral risk factors** |  |  |
| BMI\_BL | BMI | Body mass index, kg/m2 |
| CHARLSON | Charlson comorbidity index | Count of number of medical comorbidities |
| CTQ\_WALKER\_CAT\_BL | Childhood maltreatment | 0 = no maltreatment, 1 = nonsexual maltreatment, 2 = sexual maltreatment |
| SCID\_PHMDD | Past history of depression | 1 = yes, 0 = no |
| GODIN2 | Leisure-time exercise | How often during your leisure time you work up a sweat (1=often; 2=sometimes; 3=never/rarely) |
| ALC\_DRINKS\_PAST\_YEAR | Alcohol use | Approximate number of alcoholic drinks in the past year. This variable should be collapsed into a smaller number of categories using your discretion. |