

Practical Data Management and Analysis for Public Health

Graded Assignment 2

Posttest data from the “Don’t Just Sit There” evaluation in three high schools are finally available, and your assignment now is to analyze them. Before you begin, recall the following facts about the intervention itself and the evaluation design. The goal of the intervention is to reduce overweight and obesity in high school students. Components of the intervention are designed to increase self-efficacy for physical activity and value-expectancy for physical activity among participants. These, in turn, should lead to increased levels of physical activity and decreased incidence and prevalence of overweight and obesity. The evaluation is being carried out in three high schools. In each, 100 students were recruited and randomly assigned to either the intervention group or the control group. Baseline measures, including questionnaire-based assessments of self-efficacy and value-expectancy; an objective assessment of physical activity behavior via accelerometers; and objective assessments of height and weight, were collected prior to the intervention. The same measures were collected again six months after the intervention began. Thus, the evaluation uses a pretest-posttest control group design.

Full data from the evaluation are available in the dataset `Schools123PREPOST.sav`. That dataset includes all raw data, plus derived variables including scale scores, computed BMI, and dichotomous and ordinal weight categorizations. The meaning of all variables should be clear from the codebook, `DJSTprepostcodebook.doc`. To determine whether the intervention was effective, use SPSS to carry out the following analyses.

1. Limiting your attention to members of the treatment group, determine whether and by how much self-efficacy, value-expectancy, physical activity, and BMI changed between pretest and posttest.
2. Still limiting your attention to members of the treatment group, determine whether there was any change between pretest and posttest in (a) the proportion of participants who were obese, and (b) the distribution of participants across the four weight categories: underweight, normal weight, overweight, and obese.
3. Next, ignore the pretest data and compare the treatment and control groups on the following posttest measures: self-efficacy, value-expectancy, physical activity, and BMI.
4. Compare the treatment and control groups in terms of (a) the proportion of participants who were obese at posttest; and (b) the distribution of participants across the four weight categories.
5. For each continuous posttest variable (i.e., self-efficacy, value-expectancy, physical activity, and BMI), carry out an analysis that incorporates the corresponding pretest variable into an examination of the effect of being in the treatment group versus the control group.
6. Administrators at one school, Clara Barton, are interested in sex-disaggregated effects of the intervention within that school. Carry out the analyses requested in Task 1 for (a) girls in Clara Barton and (b) boys in Clara Barton. Note that your analyses should be appropriate for the small sample sizes in these subgroups.

7. Likewise, carry out analyses requested in Task 3 for (a) girls in Clara Barton and (b) boys in Clara Barton, making sure that your analysis is appropriate to the small sample size.

Prepare a written report summarizing the results of all of these analyses. For each analysis of each dependent variable, be sure to cover the magnitude and direction of the estimated effect, as well as its statistical significance. Your report should make clear whether, and in what ways, the evaluation data provide support for the effectiveness of the intervention on increasing self-efficacy and/or value expectancy, increasing physical activity, and decreasing BMI.

There are two deliverables for this assignment:

(1) An SPSS syntax file that accomplishes Tasks 1 through 7. The file should contain all of the commands necessary for accomplishing these tasks, in the specified order, and should not contain any extraneous commands.

(2) Your written report summarizing the results. The report should integrate narrative text with results in tabular form. Please do not copy-and-paste SPSS into the report, but rather prepare your own tables.