**Data analysis plan.** Data will be entered into a computer and analyzed using Statistical Package for the Social Sciences (SPSS) software, version 24 (IBM Corp, 2016). Entered data will be doubled checked manually in order to maintain data accuracy. Prior to data analysis, frequencies and summary statistics will be checked periodically to ensure sufficient data are available for each variable planned in the analysis. Descriptive statistics and graphical summaries will be obtained for all key outcome and variables to check for outliers, missing data and the need for transformations or non-parametric methods. Assumptions of each test used for data analysis will be checked and amended appropriately. In particular, to characterize the sample we will compute means and standard deviations (continuous measures) and percentages (categorical variables) for all measures at each time point. Baseline demographic, clinical and contextual factors will be checked for associations with the primary outcome measures and will be considered as potential moderators of treatment effects. The analytical tools will ANOVA test and fitting multiple linear regression models for the outcomes improvement in self-efficacy and improvement in mean of adherence.

**Data Analysis Plan**

***Research Aim #1***. Test the effects of the proposed self-efficacy-enhancing smart-phone application on the improvement of self-efficacy for the adherence to healthy behaviors [change in self-efficacy score at post-test from pre-test] (Primary aim).

*Hypothesis* ***#****1.* GDM women who received the proposed self-efficacy-enhancing smart-phone application will report improved self-efficacy for the adherence to healthy behaviors as measured by DMSES, compared to the GDM women who received the traditional health education and compared to GDM women who did not receive either the SEESPA and traditional health education. ANOVA test will be performed to answer hypothesis one.

**Research Aim #2**. Investigate the impact of improved self-efficacy [change in self-efficacy score at post-test from pre-test] on the improvement in adherence to healthy behaviors [change in mean of adherence at post-test from pre-test] (Secondary aim).

*Hypothesis* ***#****2:* GDM women who have higher improvement in self-efficacy will report higher improvement in adherence to healthy behaviors as measured by SDSCA, compared to GDM women who have lower improvement in self-efficacy, controlling for the groups. Multiple linear regression model will be fit with the improvement in mean of adherence as the outcome and improvement in self-efficacy score and group assignment as the predictors.

**Research Aim #3**. Determine the relationship between improvement in self-efficacy for adherence to healthy behaviors [change in score of self-efficacy at post-test from pre-test] and women’s demographic variables, controlling for the groups.

*Hypothesis* **#***3.* Participants’ demographic variables are significant predictors of improvement in self-efficacy for adherence to healthy behaviors, controlling for the group. Multiple linear regression model will fit with the improvement in score of self-efficacy for adherence as the outcome and group, age, income, education level, pre-pregnancy weight, parity, previous history of GDM, family history of type 2 diabetes/GDM, barriers for adherence to healthy behaviors, cue to action for adherence to healthy behaviors, and gestational age at GDM diagnosis as potential predictors.

**Research Aim #4**. Determine the relationship between improvement in self-efficacy for adherence to healthy behaviors [change in score of self-efficacy at post-test from pre-test] and women’s physiological variables, controlling for the groups.

*Hypothesis* **#***4.* Participants’ physiological variables are significant predictors of improvement in self-efficacy for adherence to healthy behaviors, controlling for the group. Multiple linear regression model will be fit with the improvement in score of self-efficacy for adherence as the outcome and group, hemoglobin A1c, fasting blood glucose and capillary blood glucose level as potential predictors.