STATISTICAL ANALYSIS PLAN

Values-Affirmation + Education Intervention Targeting Medication Adherence in Older Adults With Heart Failure

NCT05575375

8/1/2022

STATISTICAL DESIGN AND POWER

General Approach: Means and standard deviations will be used to describe continuous variables. Frequencies and percentages will be used to describe categorical data. For secondary, baseline descriptive, and exploratory analyses (see below), a p value < .05 will indicate statistical significance with a two-tailed test. Assumptions of relevant statistical tests such as assumptions of normality of the data distribution will be checked to ensure sound application and interpretation of inferential tests.

Intent-to-treat analyses will be used (i.e., all randomized participants will be included in analyses).

Analysis of Primary Endpoints: We will examine descriptive statistics (i.e., means, standard deviations, frequencies, percentages) to assess the primary endpoints. Means and standard deviations will be used to describe continuous variables. Frequencies and percentages will be used to describe categorical data.

1) Recruitment feasibility will be determined through examination of the percentage of eligible patients who enroll in the study.
2) Retention will be calculated as the percentage of individuals who were enrolled and completed both the baseline assessment, monitoring periods, and end-of-treatment assessment. Feasibility of procedures will be defined as achieving a retention rate of 80%.
3) Patient acceptance of the intervention will be determined by mean satisfaction ratings rated on self-report measures with Likert-type questions and assessed through open-ended responding. Adequate acceptability will be defined as ≥ 80% endorsement of being at least somewhat satisfied with participation.

Analysis of Secondary Endpoints:

1) Self-reported medication adherence. Analysis of covariance (ANCOVA) will be used to examine differences in self-reported adherence between groups at end-of-treatment.
2) Electronically-monitored medication adherence measured the number of days ≥80% of prescribed doses were taken. ANCOVA will be performed to examine differences in each outcome between groups at end-of-treatment.
3) Additional secondary analyses will use ANCOVA to examine differences in health-related quality of life, self-efficacy, perceived stress, affect and medication-related attitudes between groups at end-or-treatment.

All analyses of secondary endpoints will be performed with and without adjustment for covariates and baseline scores on the endpoint of interest to control for potential confounders.

Baseline Descriptive Analyses:
Descriptive statistics including means, standard deviations, frequencies, and percentages, will be calculated to characterize demographic, medical, and baseline psychosocial variables. Non-completers and completers will be compared using independent t-tests and chi-squared tests to assess for any differences in baseline characteristics. T-tests and chi-squared tests will also be used to assess differences in demographics and baseline medical and psychosocial characteristics between groups.

There will be no planned interim analysis in this small pilot study.

Exploratory analyses will also examine potential mechanisms of action that warrant examination in a subsequent fully-powered efficacy trial through testing of potential mediators (e.g., changes in self-efficacy, perceived stress, affect, or medication related-attitudes).

To assess potential mediators, multivariate regression analyses will be performed. The direct effects of the treatment condition on the mediator of interest (e.g., self-efficacy, perceived stress, affect, or medication-related attitudes), will be calculated using univariate linear regression. Next, the association between the mediator of interest on medication adherence will be calculated using a linear regression model that includes treatment condition and the mediator of interest as predictors of adherence (dependent variable). Coefficients from

these models will be used to test the indirect effect by the delta method (Sobel test). Mediation analyses will be performed with and without adjustment for covariates and baseline adherence to control for potential confounders.

Potential moderators (e.g., depressive symptoms, social support) will also be tested on an exploratory basis to assist in identifying potential moderators that warrant future study. To assess potential moderators, an interaction term will be created between the variable of interest and the study condition (intervention versus control group assignment) and entered as a predictor in a multivariate regression analysis.