Cover Page
Study Title: Twitter and Cardiovascular Health
NCT: NCT02806700
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Re: Statistical analysis plan
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Statistical Analysis Plan (Twitter and Cardiovascular Health: Twitter and Hypertension)

We will use summary statistics to compare demographics and survey responses (health status, ideal CV health status, self-practices perceived usefulness/ease of use) between groups. Categorical variables will be presented as frequencies and percentages and continuous baseline variables will be presented as means and standard deviations (if skewed these will be presented as medians and interquartile ranges).

Our primary outcome will be a 5mmHg change in systolic blood pressure from baseline to study end at 6 months. We will conduct an intent-to-treat analysis. We will use paired t-tests to compare the mean difference in SBP between the intervention and control groups. We will also conduct a multiple linear regression analysis for change in SBP adjusting for covariates which may be imbalanced even after randomization to improve efficiency of our estimates. We will also adjust for baseline SBP. The distribution of change in SBP will be assessed and if it is non-normal (skewed) we will use an appropriate transformation (such as natural log) or we will use a generalized linear model with appropriate family and link choices to model our outcome.
For the secondary outcome measure, we will use paired t-test for pre-post differences of PAM scores. A multiple linear regression model will also be used to account for additional imbalances in demographic and baseline health characteristics not evenly distributed by arm. In all models, a binary indicator for control/intervention group will be included. Baseline PAM score will also be adjusted for in the model. Covariates with missing data will be assessed for patterns of missingness and non-ignorability and will be multiply imputed if deemed necessary and reasonable.