TITLE:	Randomized Trial of Peer-to-Peer Versus Pharmacist Education to Improve Older Adults' Vaccination Knowledge Through the Senior Center Model of Care
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Overview of Statistical Analysis

The design of the study was a randomized trial with randomization to PHARM or PEER performed at the program date level. The primary outcome measure was a between-group comparison of change in knowledge for PHARM vs. PEER at BL vs. PT, and BL vs. M1. Secondary measures included between-group examinations of beliefs, trust, and activation at all 3 time points (BL vs. PT and M1). We also measured within-group differences in knowledge, beliefs, and activation and the intervention costs of PHARM and PEER, including program development, training and implementation.

Study data was recorded using paper forms and input into SAS Version 9.4 for analysis. Electronic data was password-protected by CIP while enrollment and data collection were ongoing. Files were checked to ensure de-identification prior to sharing with the Rutgers University investigators who completed the analyses.

Analysis was performed using an Intention-to-Treat (ITT) sample. This sample included all participants meeting study including criteria with ≥1 documented response from the baseline survey. In the case of missing data from the post-intervention or one-month follow-up survey, the matrix below was used to carry forward observations. For all tests, the significance level was chosen as $\alpha = 0.05$, and was downward adjusted via the Bonferroni method when appropriate.

Table 1. ITT approach for handling missing follow-up data.

BL Data	PT Data	M1 Data
Present	Present	**Absent** *Utilize PT Data*
Present	**Absent** *Utilize BL Data*	Present
Present	**Absent** *Utilize BL Data*	**Absent** *Utilize BL Data*

*BL = baseline, PT = post-intervention, M1 = one-month follow-up

Baseline Demographics

Demographic analysis was carried out via t-test for continuous variables and Chi-square test for categorical variables.

Knowledge

The number of correct responses to the knowledge items at each timepoint was calculated as a whole and by disease (pneumonia, influenza, zoster). Baseline knowledge was compared by race via Kruskal-Wallis test. Because the knowledge data were expected to be non-normal and integer-valued, knowledge items were assessed using nonparametric methods. Specifically, between-group differences in knowledge were assessed at each timepoint via Wilcoxon Rank-Sum test. Similarly, between-group knowledge differences across timepoints were assessed pairwise via Wilcoxon Rank-Sum tests with Bonferroni-corrected significance threshold of

$\alpha=0.05/3=0.0167$. Within-group differences in knowledge score across timepoints were tested pairwise using Wilcoxon Signed-Rank tests.

Beliefs

The percentage of respondents answering "Completely Agree" to each item at each timepoint was calculated and compared between PHARM and PEER, as in our PPPP study. Pairwise Wilcoxon Signed-Rank tests were run comparing within-group changes in beliefs across timepoints applying Bonferroni correction ($\alpha=0.05/3=0.0167$). Either Chi-Square or Fisher's Exact tests were used to compare beliefs between groups at each timepoint, depending on expected cell counts.

Activation

For all participants, Chi-Square or Fisher's Exact testing was performed as appropriate at each timepoint to assess between-group differences in proportions of participants planning actions, including planning vaccination and planning to speak with a doctor, pharmacist, or family/friends, as well as actions taken, including vaccinations obtained and having spoken with a doctor, pharmacist, or family/friends.

For participants who did not report positive vaccination status on the post-intervention survey, Chi-Square or Fisher's Exact testing was performed on PT & M1 data for each vaccine type to test for differences between PHARM and PEER with significance level $\alpha=0.05$. The PT response to the vaccination items was chosen instead of the BL response because it was felt that the responses to these items would be more reliable and accurate after having received the intervention as compared to baseline, when participants may have had a less clear ability to differentiate between the vaccines they may have received. For survey items pertaining to plans/actions related to vaccines, participants not reporting positive vaccination status were compared between PHARM and PEER at each timepoint for item (discussion with doctor, pharmacist, or family/friends) via Chi-Square or Fisher's Exact tests as appropriate.

Satisfaction

For both PT and M1, proportions of respondents answering favorably ("Completely Agree" or "Somewhat Agree") and unfavorably ("Completely Disagree" or "Somewhat Disagree") to the two satisfaction items (program satisfaction and program engagement) were compared between PHARM and PEER using either Chi-Square or Fisher's Exact test as appropriate.