Fresno FAWDB Fire Program Evaluation

Clinicaltrials.gov ID: NCT05239754

Statistical Analysis Plan

1/16/2025

1. Data Analysis

Briefly describe the planned approach for data analysis. If an impact analysis is proposed, name the key dependent and independent variables, and describe any methods to minimize Type I error (i.e., finding positive impacts by chance) such as limiting the number of impacts to be analyzed and/or multiple comparison correction. Describe proposed approach(es) for addressing missing data.

Identify study sample

The study sample includes participants who: 1) gave recorded informed consent to be part of the study, and 2) took both an entrance and exit survey (for attitudinal outcomes) or entrance and follow-up survey (for behavioral outcomes). The CONSORT diagram in Appendix C shows exclusion criteria and the anticipated size of the overall study sample. The analytic sample for particular outcome measures will vary based on missing data.

Defining analysis measures

For each outcome construct, we have identified the relevant measures from nFORM that are theoretically aligned with that construct. We will generate a correlation matrix between items in a given construct to ensure that theoretically related items are also empirically related in our data set. Items that are not strongly correlated with other items in a construct will be removed as necessary. Factor analysis will be used to ensure that all construct items hang together (using an alpha of 0.7 or higher as the threshold). If an alpha of 0.7 cannot be obtained, that outcome will be removed.

Once we are confident that all of the items align with a given construct, we will create a composite measure by taking an average of the scores on each non-missing item in the construct. The measure definition matrix below provides information on each proposed outcome. For composite measures, a change score will be calculated between a participant's pre-program composite score and post-program composite score. For standalone survey items, a change score will be calculated between a participant's pre-survey and post-survey responses.

For the sake of consistency and simplicity, parenting and co-parenting analyses will use a participant's youngest child as the focal child.

Measure	Sample	Variable Type	Data source(s)	Variable Name	Definition
Parenting attitudes	Has at least one child age 24 or younger, saw child within past month	Continuous (range from 1 to 5 where 1 is strongly disagree and 5 is strongly agree)	nFORM entrance, nFORM exit	Par_Att	Average of 7 survey items that relate to frequency of key parenting attitudes.

Parenting behaviors	Has at least one child age 24 or younger, saw child within past month	Continuous (range from 1 to 5 where 1 is never and 5 is every day or almost every day)	nFORM entrance, OLLE 1-year follow-up	Par_Beh	Average of 7 survey items that relate to frequency of positive interactions with participant's youngest child.
Co-parenting behaviors	Has at least one child age 24 or younger	Continuous (range from 1 to 5 where 1 is strongly disagree and 5 is strongly agree)	nFORM entrance, OLLE 1-year follow-up	Copar_Beh	Average of 11 survey items that relate to positive interactions with the mother of participant's youngest child.
Financial behaviors	Has at least one child age 24 or younger	Dichotomous (0/1)	nFORM entrance, OLLE 1-year follow-up	Fin_Beh	Binary measure of having opened a checking/savings account.
Financial attitudes	All study participants	Continuous (range from 1 to 5 where 1 is strongly disagree and 5 is strongly agree)	nFORM entrance, nFORM exit	Fin_Att	Average of 4 survey items that relate to levels of agreement with key financial attitudes.
Employment behavior	All study participants who came into the program without a resume	Dichotomous (0/1)	nFORM entrance, OLLE 1-year follow-up	Emp_Beh	Binary measure of having a completed resume to give employers.
Employment attitudes	All study participants	Categorical (range from 1 to 5 where 1 is never and 5 is always)	nFORM entrance, nFORM exit	Emp_Att	Average of 4 survey items that relate to levels of agreement with key employment attitudes.

Commented [A1]: Shouldn't this be OLLE 1-year follow-up? Same for employment behavior below.

Commented [A2R1]: Yes!

Commented [A3]: Also, FYI, I updated the year for the plan updated date in the headers.

Handling missing data

Outcomes

When creating the composite measures for our behavior and attitude outcomes, we will create a composite score by taking the average of multiple individual items. For these measures, our current plan is to use 20% as a threshold for allowable missing items, based on guidance from evaluation technical assistance resources. This plan is contingent on the final distribution of missing data in our data set. If participants have more than 20% of items missing for a given construct, the respondent will be assigned a missing value for that construct and will be excluded from the analytic sample for that outcome. We will not be imputing truly missing values for outcomes. To create a construct score, the average will divide by the number of non-missing values in the construct.

Participants who have not seen their child within the past month will have their parenting behavior responses set to "Never" (1) and will be included in the analytic sample for that outcome.

Data for the implementation outcomes could be missing as a result of programmatic data entry issues. For the sake of this evaluation, we assume that any primary or support services received by a participant are being accurately logged into nFORM, so a lack of documented attendance, service contacts, referrals, etc. is indicative of lack of services (i.e., a participant not receiving the program components as intended).

Assessing non-response bias

We will conduct response rate analysis for each primary outcome of interest to assess non-response bias and adjust for threats to internal validity. Using data from the Applicant Characteristics Survey, we will look at demographics (race, ethnicity, age, education level) and primary reason for joining the program among participants who fall into each of the following categories: 1) non-respondents who answered no surveys after the ACS, 2) respondents who completed a pre-survey only, and 3) respondents who completed both a pre- and follow-up survey (complete case).

Analytic approach

The main goal of this descriptive study is to assess pre-to-post change scores in the attitudinal outcomes listed above, and assess pre-to-one-year follow-up change scores in the behavioral outcomes listed above among program participants before and after primary workshops. We will use paired sample t-tests to assess the magnitude and significance of changes among program participants in the analytic sample for each outcome. For binary economic stability outcomes, we will descriptively report the percent of participants who opened a checking or savings account 1 year after enrollment, compared to the percent who had opened these accounts before the program. For binary employment outcomes, we will descriptively report the percent of participants who did not have a resume 1 year after enrollment, compared to the percent who did not have a resume before the program. We will adjust our p-values for multiple hypothesis testing and report the adjusted p-values in the appendix of the final report.

For the implementation analysis, program fidelity will be descriptively reported by the percentage of enrolled participants who receive: 1) any primary workshops, 2) employment supports, 3) substantive service contacts, 4) referrals. The program aims to provide all participants each of these four program components, so the percentage of participants who receive each of these will be compared to the 100% benchmark. Number of substantive service contacts per participant will also be compared to the benchmark of 8 SSCs set by OFA for FIRE grantees.

Exploratory analysis will examine how dosage varies by workshop characteristics (e.g., timing and length of sessions) and participant characteristics (e.g., age, employment status, relationship status).