

Stats 211 Final Code

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Preliminary Data Description and Management

Table 1: Summary Statistics for Study Participants in Averages or Proportions

Characteristic	Overall	Completed	Failed to Complete
Age	79.51	79.1	80.25
Gender	male: 41.8%	male: 41.1%	male: 42.9%
Ethnicity	white: 77.2% other: 22.8%	white: 81.6% other: 18.4%	white: 69.0% other: 31.0%
Education in years	14.96	15.28	14.36
Alcohol Abuse History (Yes)	22 (3.4%)	13 (3.1%)	9 (4.0%)
Drug Abuse History (Yes)	1 (0%)	0 (0%)	1 (0%)
Smoking History (Yes)	250 (38.8%)	159 (38.0%)	91 (40.3%)
Cardiovascular Disease History (Yes)	422 (65.5%)	265 (63.4%)	157 (69.5%)
Cancer History (Yes)	163 (3.1%)	104 (25.3%)	59 (26.1%)
Baseline MMMSE (0-100)	95.28	95.85	94.23
Baseline CDRS	0.31	0.25	0.42

Table 2: Summary Statistics for Study Partners in Averages or Proportions

Characteristic	Overall	Completed	Failed to Complete
Relation to Participant	child: 16.8% friend: 29.3% other: 12.0% spouse: 42.0%	child: 17.9% friend: 28.5% other: 10.5% spouse: 43.1%	child: 14.6% friend: 31.0% other: 14.6% spouse: 40.0%
Age	68.68	68.39	69.19
Gender	female: 74.5%	female: 74.0%	female: 75.7%
Education in years	14.89	15.11	14.48
Days per Week with Participant	5.6	5.6	5.7
Live with Participant? (Yes)	48.9%	49.3%	48.2%
Show signs of Mental Decline? (Yes)	30.1%	27.8%	36.3%

The Clinical Dementia Rating Scale (CDRS) is 5 point scale (0 = Normal, 0.5 = Very Mild Dementia, 1 = Mild Dementia, 2 = Moderate Dementia, 3 = Severe Dementia). The Modified Mini-Mental State Exam (MMMSE) that has score ranging from 0 to 100 with greater values signifying better cognition.

Informant's Info

Split data in terms of those who completed the study and those who did not

```
complete <- subset(studycompletion, comp.study == 1)
incomplete <- subset(studycompletion, comp.study == 0)
```

Section off certain columns of data for each subpop

```
complete <- cbind(complete[,1:13],complete[,18], complete[,24], complete[,26:33])
incomplete <- cbind(incomplete[,1:13],incomplete[,18], incomplete[,24], incomplete[,26:33])
names(incomplete)[14] <- names(complete)[14] <- "mpsocioal"
names(incomplete)[15] <- names(complete)[15] <- "mssocioal"
```

Unadjusted Comparison of Completion by Study Partner

Predictor of Interest: Relationship of study partner to the participant (inf.relat) Y: Completion (comp.study)

Because comp.study is binary, we will assume a Bernoulli distribution on our Y variable with mean μ and variance $\mu(1-\mu)$. We will fit a GLM / do logistic regression. This model models the log odds.

```
fit.unadj <- glm( comp.study ~ as.factor(inf.relat), data = studycompletion , family = binomial )
glmCI( fit.unadj )
```

##	exp(Est)	ci95.lo	ci95.hi	z value	Pr(> z)
## (Intercept)	2.2727	1.5092	3.4226	3.9301	0.0001
## as.factor(inf.relat)friend	0.7480	0.4515	1.2391	-1.1274	0.2596
## as.factor(inf.relat)other	0.5867	0.3190	1.0790	-1.7153	0.0863
## as.factor(inf.relat)spouse	0.8800	0.5438	1.4240	-0.5206	0.6027

Beta Interpretations

2.27 is the estimated odds of completing the study for a participant who has their own child as a study partner.

Participants with a friend as study partner are estimated to be 25% less likely to complete the study than participants with their own child as a study partner.

Participants with a “other” (e.g. caretaker) as study partner are estimated to be 41% less likely to complete the study than participants with their own child as a study partner.

Participants with a spouse as study partner are estimated to be 12% less likely to complete the study than participants with their own child as a study partner.