VCPA Supplemental Analysis - Skin and Bones Draft

Mitchell Schepps

6/19/2020

Table of Contents (Pages not aligned yet)

Data Collection

Individuals were recruited _____. We analyze individuals for 6 observational periods of 90 days. We call these 90 day subsets quarters, and label them quarter 1, quarter 2, and so forth. Cohort 1 collection ended on 6/1/2019, and our observation for them continues through 10/1/20. The cohort 1 enrollment took in 465 parolees, randomizing 232 into the Pay for Success program. When we say "between groups", which we will refer to often, we mean between individuals in the Pay for Success program and those in the Control group. Due to NCC processes, 23 people were removed and 209 were analyzed from start to finish. The other 23 individuals were analyzed for ___ of the ___ potential quarters before being removed.

Demographics

The demographic variables were supposed to match up between the groups. If they did not, we would have to implement some proportion matching to equate the populations. Table 1 below shows no significant differences between the demographics of Pay for Success Group and the Control group.

variable	pfs	other	pval	overall
# of Sample Population Members	209	233	-	442
Age, Mean (SD)	34.1 (10.6)	32.9 (9.7)	0.1984	33.5 (10.2)
Male	79.9%	79.8%	1	79.9%
Female	19.6%	20.2%	-	19.9%
Race			0.2241	
Latino/Hispanic	55%	63.1%	-	59.3%
White	37.3%	28.3%	-	32.6%
Black	5.3%	5.6%	-	5.4%
Other	0.5%	0.9%	-	0.7%

variable	Control.Group	Service.Group
# of Sample Population Members	233.0000000	209.0000000
Aggregate Number of Arrests	321.0000000	250.0000000
# of Members Arrests 1+ times in 12 months	131.0000000	104.0000000
Mean Number of Arrests	1.3776824	1.1961722
Rate of Re-Arrest	0.5622318	0.4976077
Relative Reduction in Mean Number of Arrests	0.1317504	2.0000000
Relative Reduction in Rate of Re-Arrest	2.0000000	0.1149421

```
pfs.risk = prop.table(table(pfs$risk.level))
other.risk = prop.table(table(other$risk.level))
risk.df = data.frame(risk.level = c('Low', 'Low/Moderate', 'Moderate', 'High', 'Very High', 'Undeclared
                     'Service Group'      = c(pfs.risk[3], pfs.risk[4], pfs.risk[5], pfs.risk[2], pfs
                     'Control Group'      = c(other.risk[3], other.risk[4], other.risk[5], other.risk
risk.df = melt(risk.df, by = 'risk.level')
```

```
## Using risk.level as id variables
```

```
risk.df$risk.level = factor(risk.df$risk.level, levels = c('Low', 'Low/Moderate', 'Moderate', 'High', '
names(risk.df)[2] = 'Group'
ggplot(data=risk.df, aes(x=risk.level, y=value, fill=Group)) +
  geom_bar(stat="identity", position=position_dodge())+
  geom_text(aes(label=paste0(round(value*100, 1), '%')), vjust=1.6, color="white",
            position = position_dodge(0.9), size=3.5)+
  scale_fill_brewer(palette="Paired")+
  labs(x = 'Risk Level', y = 'Percentage (%) of Group Population', title = 'Figure 1: ORAS Risk Level a
  theme_minimal()+
  theme(plot.title = element_text(hjust = 0.5))
```

Figure 1: ORAS Risk Level at Intake
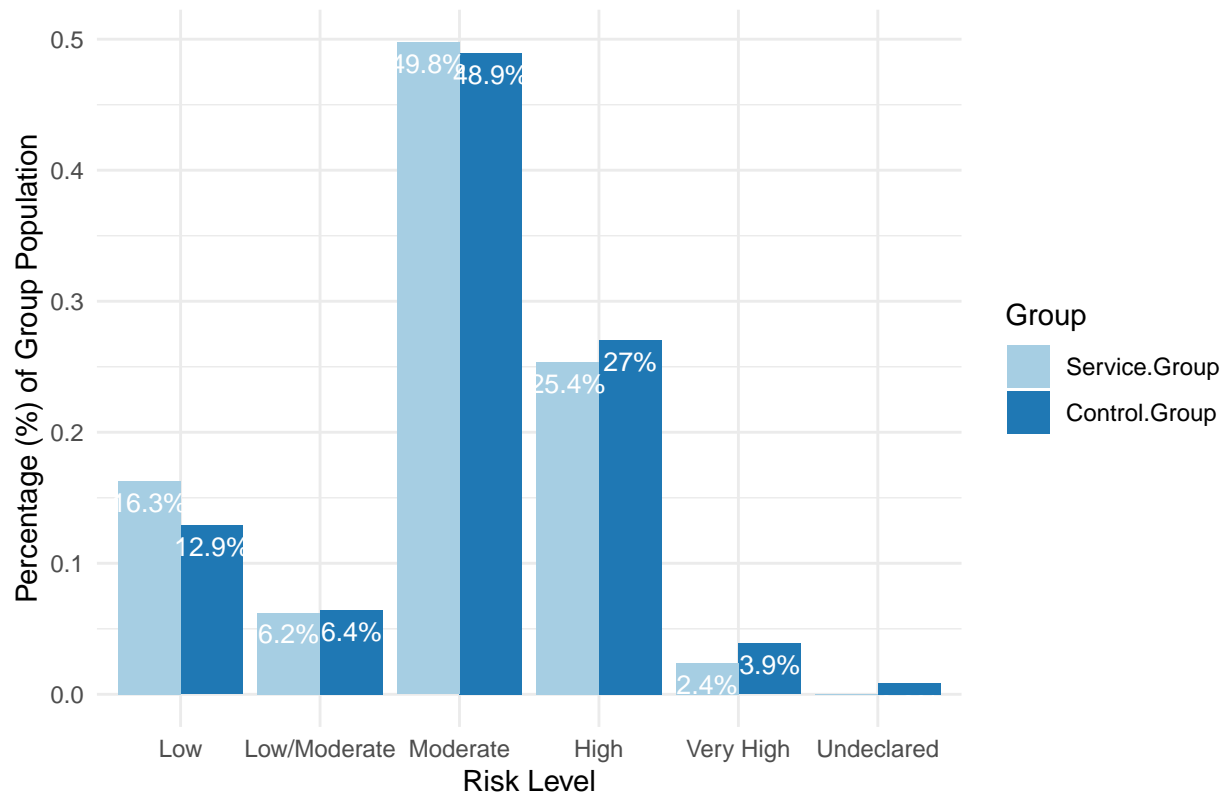
The age of parolees enrolled ranged from 20 to 74. Predominantly male and predominantly hispanic. The ORAS score follows a moderately normal distribution and again is not significantly different between groups.

Criminal Justice History

Here is both a table and an accompanying graph of the arrests by population enrollment in both cohorts.

clean	potential	group	num.arrests	people	misdemeanor	felony
28	32	pfs	9	6	11	12
47	59	pfs	26	18	5	4
64	79	pfs	27	21	6	4
94	115	pfs	20	19	5	20
129	146	pfs	26	23	7	12
149	165	pfs	21	18	13	1
138	156	pfs	29	23	6	13
103	119	pfs	31	24	9	15
82	92	pfs	33	25	7	20
44	49	pfs	27	21	1	1

clean	potential	group	num.arrests	people	misdemeanor	felony
18	24	other	15	11	25	21
40	52	other	22	16	6	4
75	94	other	24	21	5	9
103	118	other	30	18	3	17
144	172	other	32	30	11	21
184	211	other	35	28	7	19
184	210	other	42	29	14	25
158	178	other	28	26	9	21
129	144	other	42	34	16	11
99	114	other	50	37	1	1
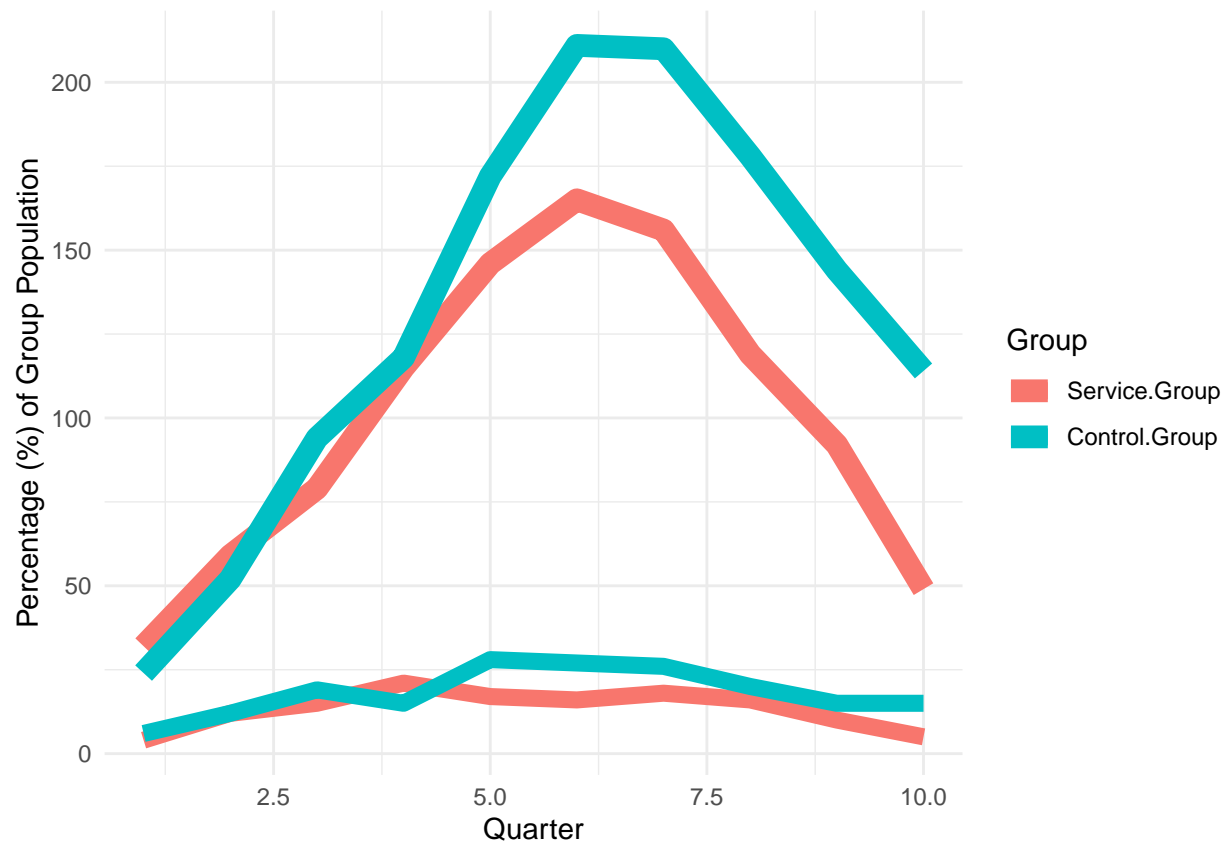
Supplemental Figure: Population and Arrests of Cohort 1 Per Quarter
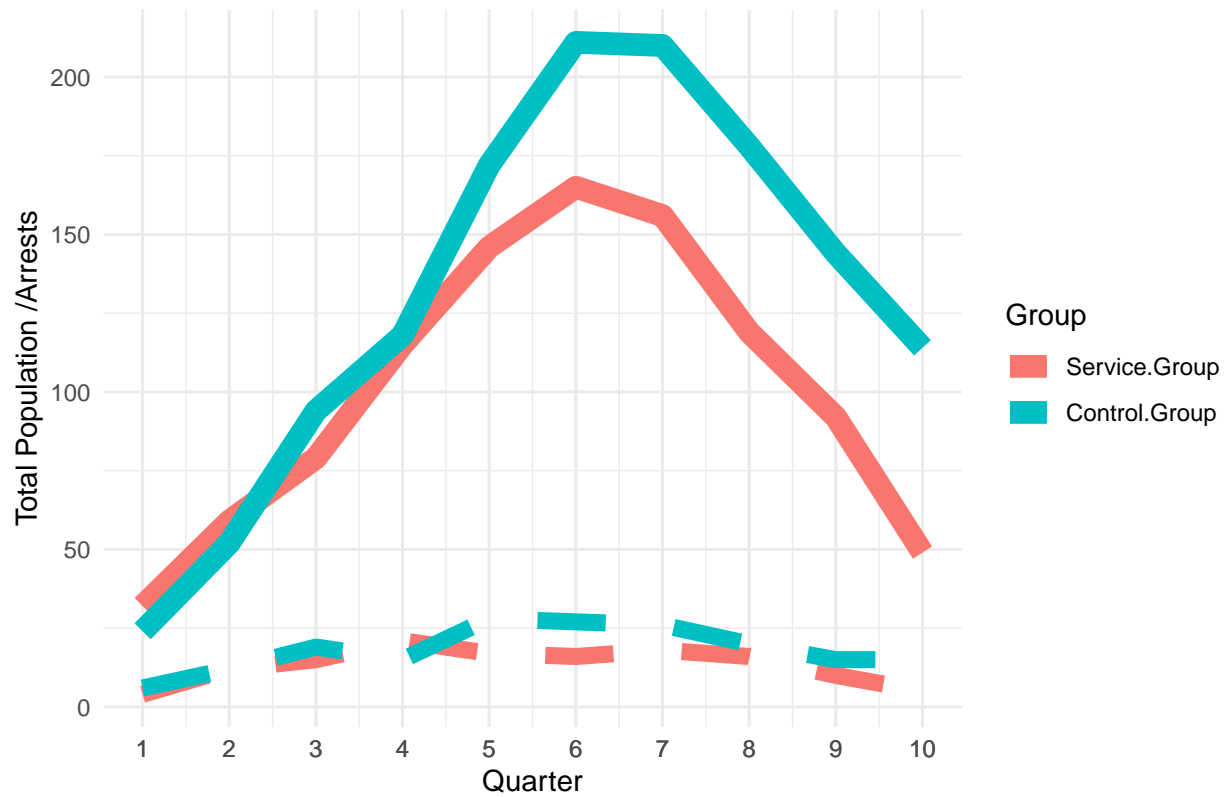
Difference in misdemeanors chi square

```
##
##  Pearson's Chi-squared test
##
## data:  final$m and final2$m
## X-squared = 60, df = 54, p-value = 0.2673
```

Difference in felonies chi square

```
##
##  Pearson's Chi-squared test
##
## data:  final$f and final2$f
## X-squared = 40, df = 35, p-value = 0.2578
```

Stratification Analysis - Gender, Race, and ORAS Risk Level

Broken down by gender

gender	pfs	other	pval
Female	17	23	0.8831
Male	82	99	-

Broken down by race

Ventura county is predominantly a hispanic community.

race	pfs	other	pval
Hispanic	55	77	0.1525
White	38	31	-
Black	4	10	-
Other	2	4	-

Broken down by ORAS Risk Level

We further analyze the arrest rates between groups by looking at the stratification of arrests by ORAS risk score. We see both the unique number of individuals being rearrested and the total number of arrests between groups is not signficiantly different.

risk.level	pfs	other	pval
Low	7	8	0.6926
Low/Moderate	5	7	-
Moderate	51	54	-
High	33	45	-
Very High	3	8	-

Services Received

The question is, out of those who were randomized to be in our RCT, were there differences between those arrested and those not arrested? People were offered difference certives or cognitive behavioral therapy. These included case management, MRT, triple P, seek safety, job readiness, and other CBT.

Differences within service members between those arrested and not

services	never	ever	pval
Case Management	1	1	1
MRT	0	1	-
Triple P	0	1	-
Seek Safety	0	0	-
Job Readiness	0	0	-

	services	never	ever	pval
6	Other CBT	0	0	-
7	PsychiatricReferred	0	0	-
8	SubstanceAbuseReferred	0	0	-
9	Graduation_Date	0	0	-
10	Discharge_Date	0	0	-
11	Discharge_Reason	0	0	-
12	SSM_Screening_date	0	0	-
13	Most_Recent_Type_of_SSM	0	0	-
14	SSM_Reason_not_Completed	0	0	-
15	SSMIncome	0	0	-
16	SSMEmployment	0	0	-
17	SSMHousing	0	0	-
18	SSMFood	0	0	-
19	SSMChild_Ed	0	0	-
20	SSMAdult_ed	0	0	-
21	SSMLegal	0	0	-
22	SSMHealthCare	0	0	-
23	SSMLifeSkills	0	0	-

```
##
##                         0          1
##   Achieving    0.04807692 0.05769231
##   Advancing    0.12500000 0.13461538
##   Beginning    0.24038462 0.44230769
##   Maintaining  0.42307692 0.15384615
##   N/A          0.09615385 0.14423077
##   NULL         0.06730769 0.06730769


##
##           0         1
##   0 0.4326923 0.5769231
##   1 0.5673077 0.4230769


##        0        1
## 6.548387 3.888889


##        0        1
## 4.850815 4.052060


## [1] NA


## [1] NA


##
##             0           1
##   0 0.951923077 0.990384615
##   1 0.048076923 0.009615385


##
##            0          1
##   0 0.94230769 0.97115385
##   1 0.05769231 0.02884615
```

```
## 
##                0          1
##    0 0.990384615 0.932692308
##    1 0.009615385 0.067307692


##    0    1
## 2.25 3.00


##    0    1
## 1.5   NA


## [1] 2.4


## [1] 1.341641


##    0    1
##    2 NaN


##           0          1
## 3.366502          NA


## [1] 2


## [1] 3.366502


##    0    1
## 0.0  0.6


##           0          1
##          NA 0.5477226


## [1] 0.5


## [1] 0.5477226
```

We see that of those not arrested, those individuals are using more of the services. It appears that services lessens the possibility of receiving services. Further, in the SSM calculation, each category had a higher mean yet not a significant difference

Summary

Cohort 2 Preview

COVID Analysis

With the genuity of the COVID-19 pandemic, we saw dramatic reductions of in-person hearings. Some hearings were moved to online. In fact, police officers were told to arrest less on the minor offenses. We used a date of March 21, 2020 as the cut-off between COVID-19 policy enaction. This as of the date of the publication, only affected two months of Cohort 1 and up to 6 total for them. As of today, the policies remain the same in Ventura county. Quarantine has not been lifted. We tested to see if the arrest rates for both groups remained similar or experienced a similar drop-off after the cutoff.