

Objective

Describe the sample

Plot Average Pain Scores over Time

Adjusted model

CODE ▼

BIOF Final Project

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Objective

Identify if there is an association between early pain management in the battlefield and long-term average pain scores after combat injury

Describe the sample

The dataset includes:

1. **ID** = study number
2. **Pain** = Pain scores, 0 to 10 higher scores indicate greater pain
3. **Intervention** = Early pain management via regional anesthesia (RA) or no early pain management (No Early RA)
4. **Month** = Month since injury that pain score was documented
5. **LOS** = Length of stay in days at initial hospital as an indicator of severity of injury
6. **Injury** = Injury Severity Score, 0 to 75 higher scores indicate greater injury severity
7. **Observations** = # of observations in the study per subject

```
##          ID          Pain          Intervention          Month
##  Min.    :1002  Min.    :0.000  Early RA    : 794  Min.    : 1.00
## 1st Qu.:1190  1st Qu.:1.000  No Early RA:1409  1st Qu.: 4.00
## Median :1364  Median :2.000                               Median : 8.00
## Mean   :1369  Mean   :2.347                               Mean   :10.14
## 3rd Qu.:1538  3rd Qu.:4.000                               3rd Qu.:16.00
## Max.   :1790  Max.   :9.000                               Max.   :24.00
##          LOS          Injury          observations
##  Min.    : 2.00  Min.    : 1.00  Min.    : 1.000
## 1st Qu.: 12.00  1st Qu.:10.00  1st Qu.: 6.000
## Median : 25.00  Median :17.00  Median : 8.000
## Mean   : 34.67  Mean   :17.72  Mean   : 7.602
## 3rd Qu.: 46.00  3rd Qu.:24.00  3rd Qu.:10.000
## Max.   :234.00  Max.   :54.00  Max.   :12.000
```

Sample Described by Intervention Group

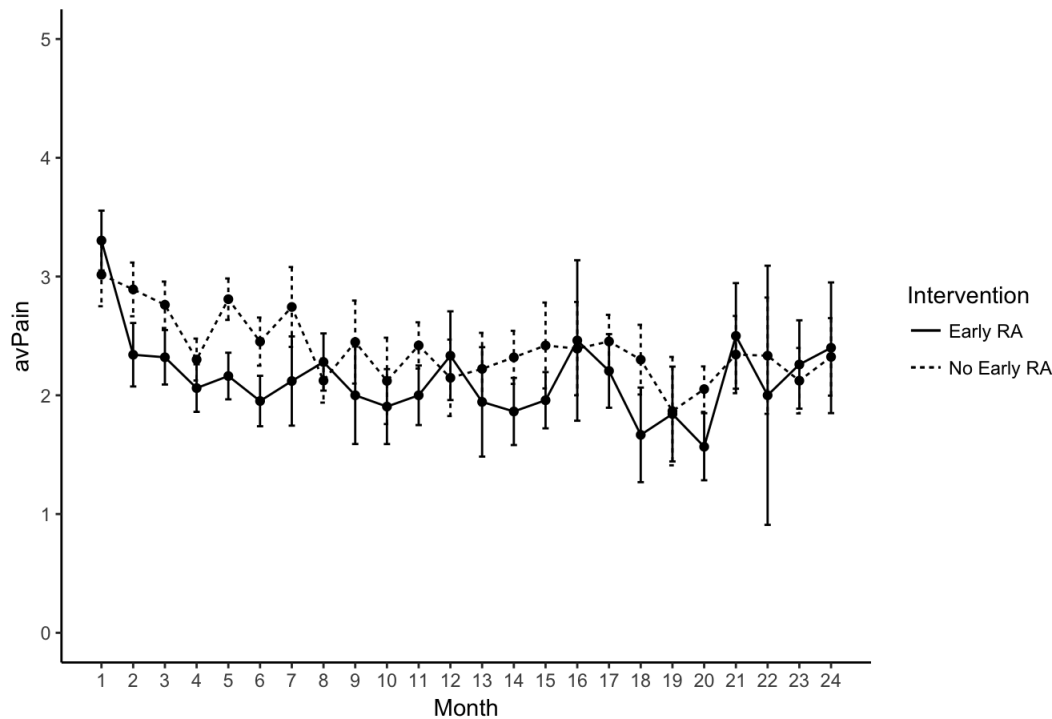
Individuals with early pain management have slightly lower pain scores

```
##          Stratified by Intervention
##          Early RA    No Early RA    p      test
##  n              794        1409
## Pain (mean (sd))    2.15 (1.77)    2.46 (1.95) <0.001
## Month (mean (sd))   10.18 (6.60)   10.12 (6.84) 0.838
## LOS (mean (sd))     40.61 (30.34)  31.32 (31.54) <0.001
## Injury (mean (sd))   17.00 (8.04)   18.12 (11.25) 0.013
## observations (mean (sd)) 7.76 (2.85)  7.51 (2.58) 0.034
```

Plot Average Pain Scores over Time

There is no clear difference in pain scores by individuals who did and did not receive early pain management over time. Need to adjust for other factors to see if the difference observed in the table above is meaningful or not.

Average Pain Per Month By Intervention



Adjusted model

When we adjust for clinical factors, such as length of stay and injury severity, on average early pain management is associated with lower pain scores over time

Note: uncertainty of the random effects parameters are not taken into account for confidence intervals.

Estimated Marginal Means From 1-24 Months

