

# HW3

*Blain Morin*

*October 23, 2018*

## Question 1:

Table 1: Summary Statistics

Statistic	Mean	St. Dev.	Min	Max	N
Pain Score	7.507	3.543	0	20	503
Average Temperature (F)	60.751	18.289	-2	95	503
Age	60.105	9.754	44	98	503
White or Hispanic	0.966	0.181	0	1	503
Income < 15k	0.141	0.349	0	1	503
Income 15 - 35k	0.360	0.480	0	1	503
Income 35 - 55k	0.274	0.447	0	1	503
Income 55 - 75k	0.103	0.305	0	1	503
Income > 75k	0.121	0.327	0	1	503
Treatment Group = 1	0.469	0.500	0	1	503
Female = 1	0.644	0.479	0	1	503
Retired = 1	0.443	0.497	0	1	503
NSAIDs = 1	0.841	0.366	0	1	503

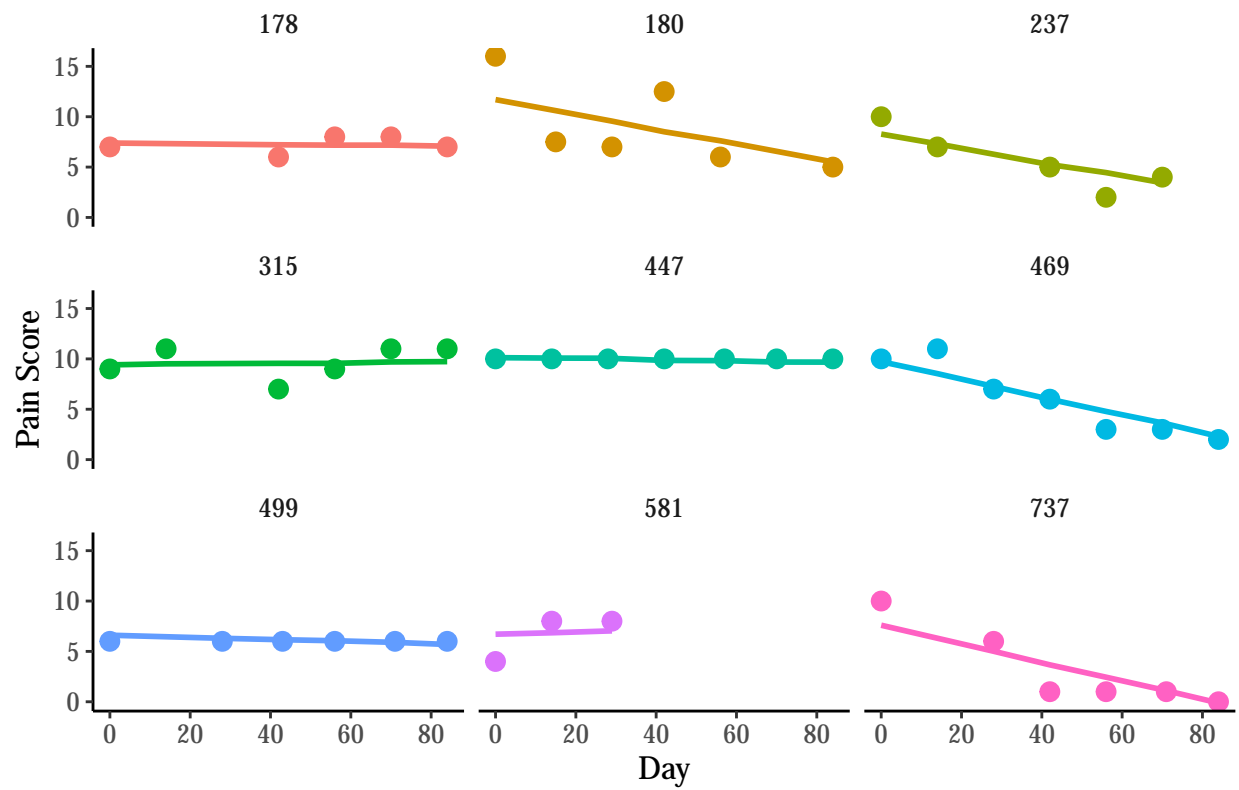
Table 2: Regression Results

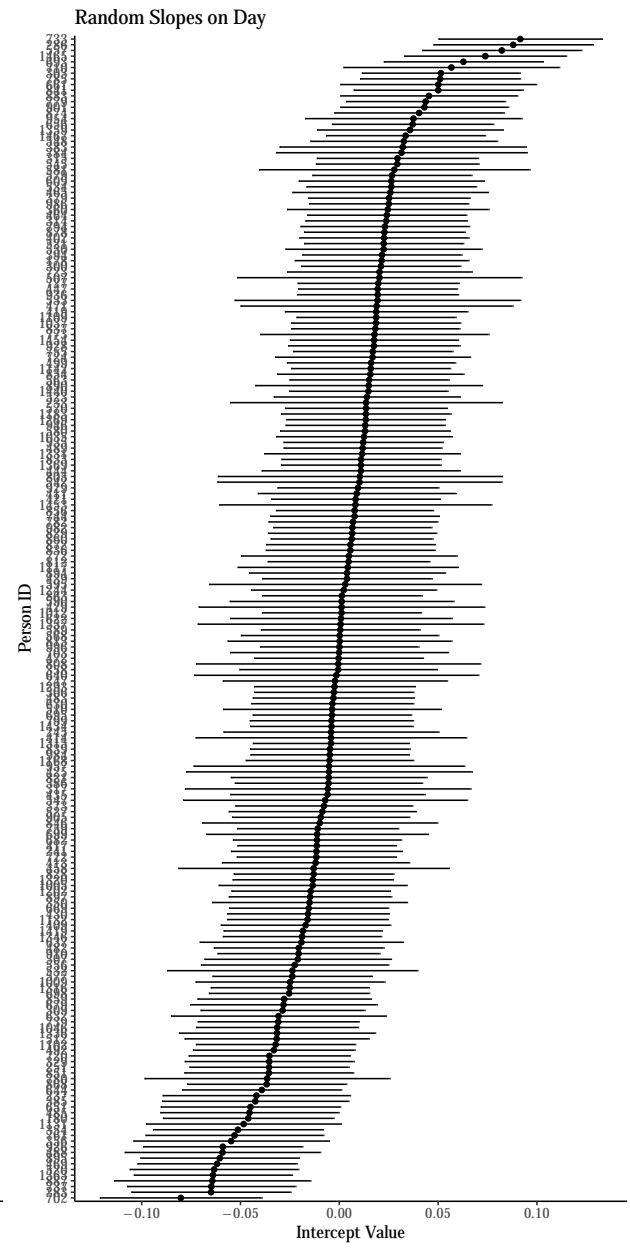
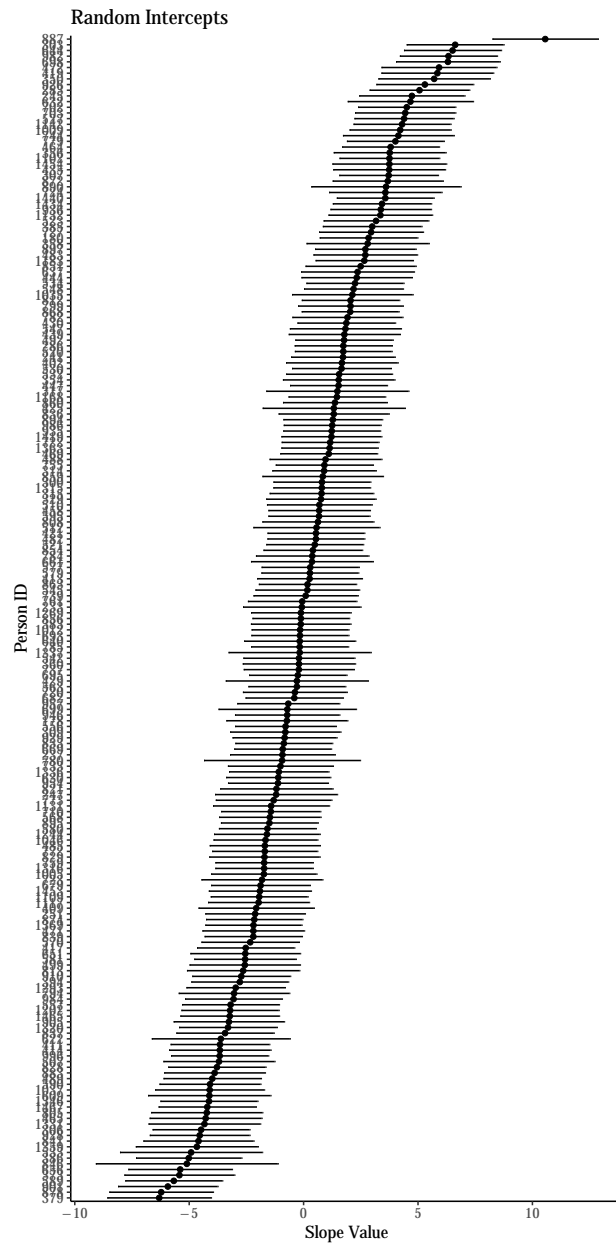
	<i>Dependent variable:</i>			
	Pain Score			
	Rand Slopes (Temp, Day)	Rand Slope (Day)	Rand Slope (Temp)	Rand Slope (Day)
	(1)	(2)	(3)	(4)
Avg Temp	−0.138 (0.176)	−0.135 (0.113)	−0.167 (0.145)	−0.132 (0.113)
Day	−0.032*** (0.005)	−0.028*** (0.004)	−0.029*** (0.003)	−0.031*** (0.005)
Age	−0.313 (0.458)	−0.262 (0.230)	−0.297 (0.233)	−0.321 (0.222)
White or Hispanic	−0.602 (1.775)	0.802 (0.713)	0.760 (0.730)	
Income 15 - 35k	0.029 (1.018)			
Income 35 - 55k	0.439 (1.101)			
Income 55 - 75k	0.067 (1.329)			
Income > 75k	−0.937 (1.331)			
Treatment	0.924 (0.679)	−0.037 (0.455)	0.088 (0.459)	−0.314 (0.496)
Female	0.445 (0.743)	0.509 (0.489)	0.488 (0.494)	
Retired	0.750 (0.971)			
Using NSAIDs	−0.169 (0.949)	0.026 (0.568)	−0.166 (0.577)	0.002 (0.568)
Day * Treatment				0.006 (0.007)
Constant	8.422*** (2.209)	7.551*** (0.923)	7.702*** (0.937)	8.747*** (0.601)
Observations	503	1,137	1,099	1,099
Log Likelihood	−1,176.820	−2,575.585	−2,618.325	−2,581.375
Akaike Inf. Crit.	2,393.640	5,175.171	5,260.649	5,184.750
Bayesian Inf. Crit.	2,478.052	5,235.196	5,320.675	5,239.774

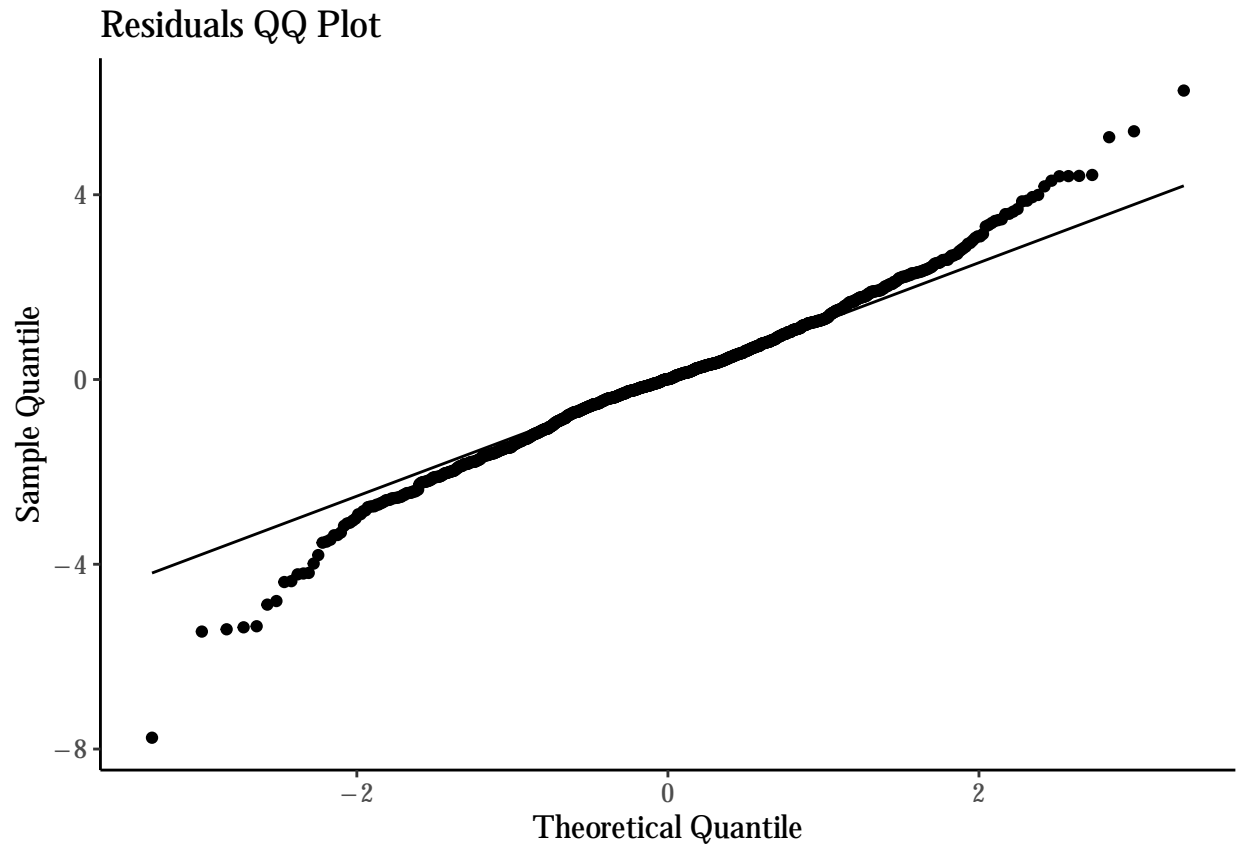
Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

# Observed vs Predicted for Nine Random Individuals







## Question 2:

Table 3: Summary Statistics

Statistic	Mean	St. Dev.	Min	Max	N
activity	4.326	4.331	0.000	48.200	1,138
which.floor0	0.777	0.417	0	1	1,138
which.floor1	0.223	0.417	0	1	1,138
has.basement1	0.875	0.331	0	1	1,138
is.sfh1	0.949	0.220	0	1	1,138
Uppm	0.878	0.323	0.414	1.696	1,138

Table 4:

	<i>Dependent variable:</i>
	log.activity
which.floor1	−0.860*** (0.097)
has.basement1	−0.105 (0.123)
is.sfh1	0.374*** (0.142)
log.Uppm	0.779*** (0.100)
Constant	1.151*** (0.185)
Observations	1,138
Log Likelihood	−1,660.784
Akaike Inf. Crit.	3,339.568
Bayesian Inf. Crit.	3,384.902
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

