Write-up for the Beat the Blues Data

Eric Reed, Sarah Nunez, Yiding Zhang, Kostis Gourgoulius
University of Massachusetts, Amherst

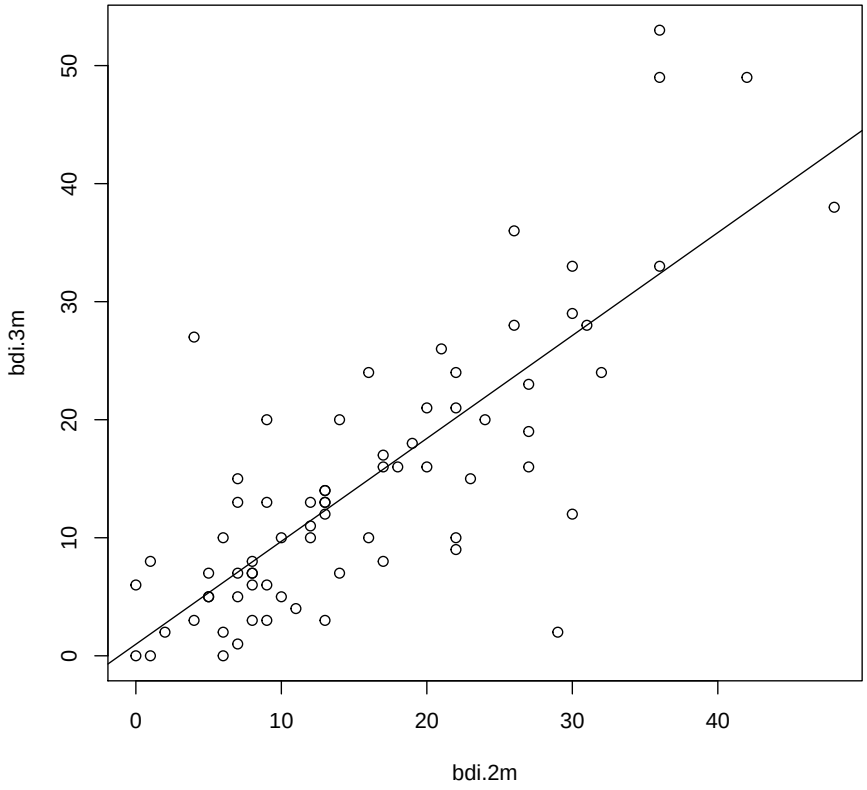
February 2, 2014

1 Background

```
library(ggplot2)
library(MASS)
library(HSAUR2)

## Loading required package:  tools

BtheB <- BtheB
attach(BtheB)
summary(BtheB)

##   drug    length   treatment     bdi.pre          bdi.2m          bdi.3m
##  No :56   <6m:49   TAU  :48   Min.   : 2.0   Min.   : 0.0   Min.   : 0.0
##  Yes:44   >6m:51   BtheB:52   1st Qu.:15.0   1st Qu.: 8.0   1st Qu.: 6.0
##                               Median :22.0   Median :15.0   Median :13.0
##                               Mean   :23.3   Mean   :16.9   Mean   :14.8
##                               3rd Qu.:30.2   3rd Qu.:23.0   3rd Qu.:20.0
##                               Max.   :49.0   Max.   :48.0   Max.   :53.0
##                                              NA's   :3      NA's   :27
##      bdi.5m          bdi.8m
##  Min.   : 0.0   Min.   : 0.0
##  1st Qu.: 3.0   1st Qu.: 3.0
##  Median :10.0   Median :10.5
##  Mean   :12.8   Mean   :11.1
##  3rd Qu.:20.0   3rd Qu.:15.2
##  Max.   :47.0   Max.   :40.0
##  NA's   :42     NA's   :48
```

2 Variables and Hypothesis

```
plot(bdi.3m ~ bdi.2m)
m2m3m <- lm(bdi.3m ~ bdi.2m, data = BtheB)
abline(m2m3m)
```




```
summary(m2m3m)

##
## Call:
## lm(formula = bdi.3m ~ bdi.2m, data = BtheB)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -24.261  -4.697  -0.338   2.585  22.534
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.9784     1.5321    0.64     0.53
## bdi.2m        0.8718     0.0802   10.87   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 7.29 on 71 degrees of freedom
##   (27 observations deleted due to missingness)
## Multiple R-squared:  0.625,Adjusted R-squared:  0.619
## F-statistic:  118 on 1 and 71 DF,  p-value: <2e-16
```

3 Missing Data

```
##       bdi.2m bdi.3m Both
## TAU        3     12    3
## BtheB      0     15    0
## Total      3     27    3
## [1] 73
## [1] 36
## [1] 37
```

The 3 that are missing from the m2 data are also missing from the m3 data, so we have 73 useuable observations. Of these 73 we have a close number for each treament; 36 had the treatment TAU and 37 had the treatment, "BtheB". It's nice that we have a almost even number of participants in each group. Though the sample size seems too small, it is far better than if we had used either of the last 2 variables.

4 Results and Interpretation