**Citalopram lasso regression:**

#Libraries needed

library(glmnet)

library(dplyr)

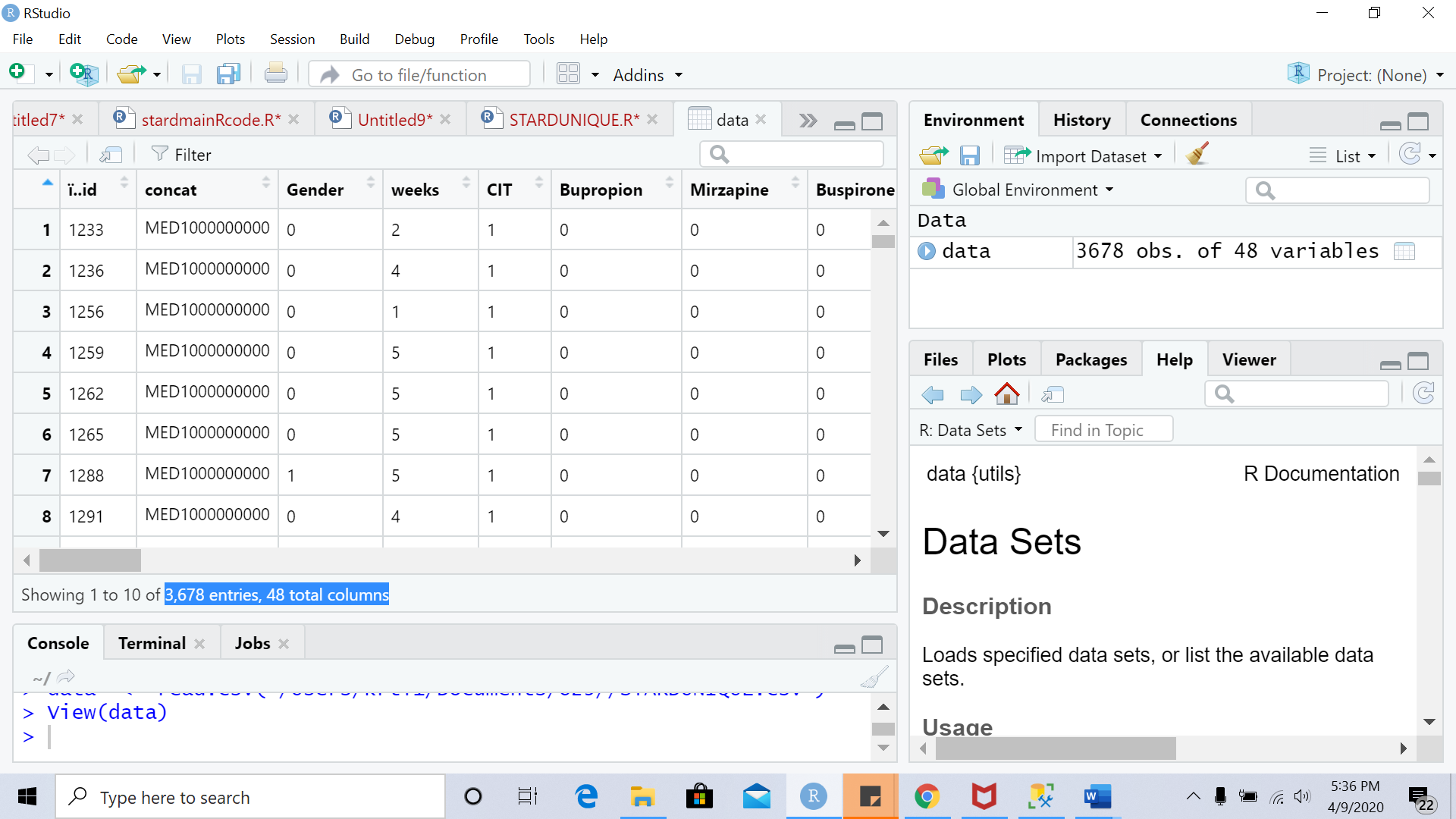
library(psych)

library(caret)

Read the data

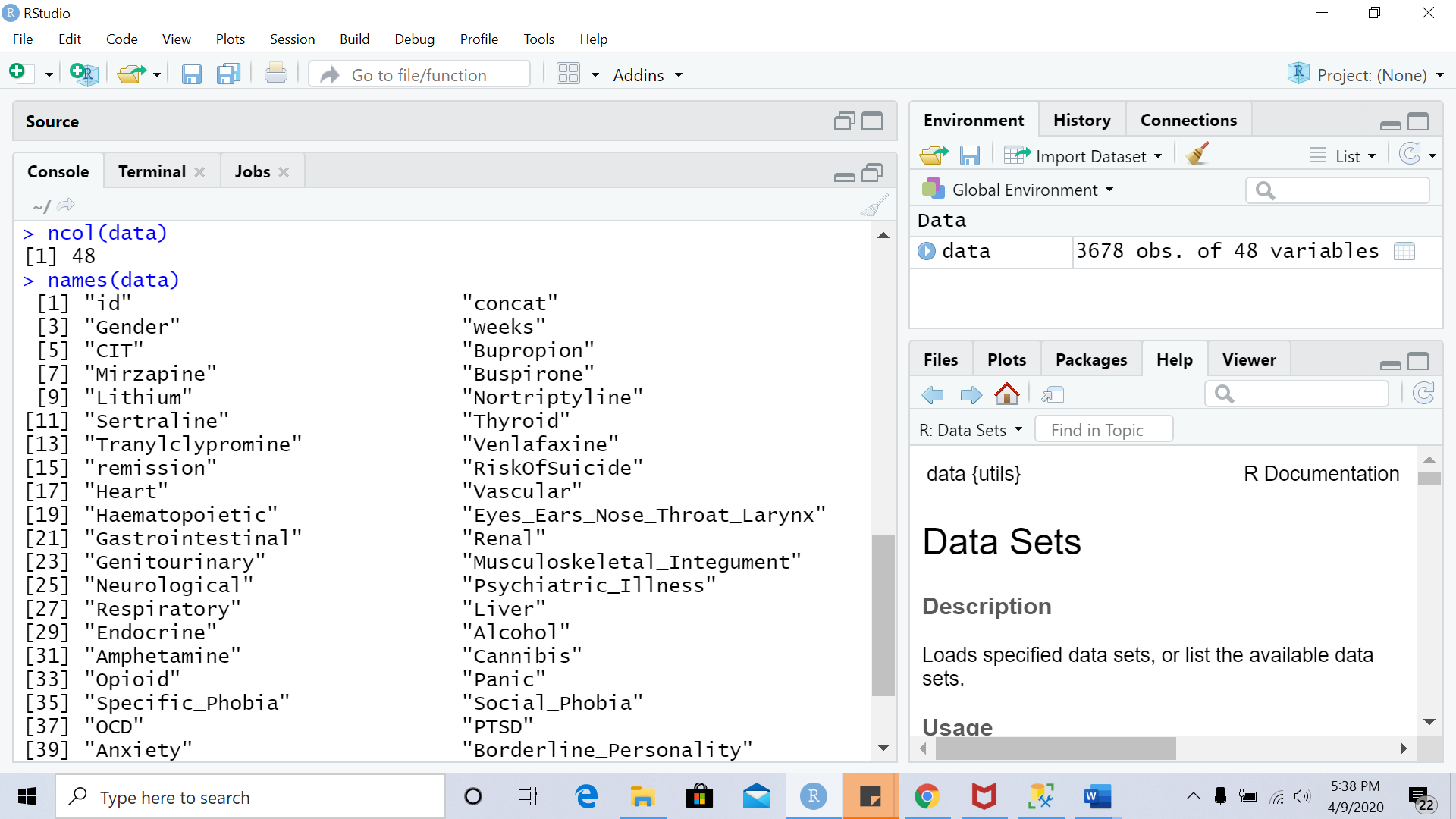
data <- read.csv("/Users/krti1/Documents/823//STARDUNIQUE.csv")

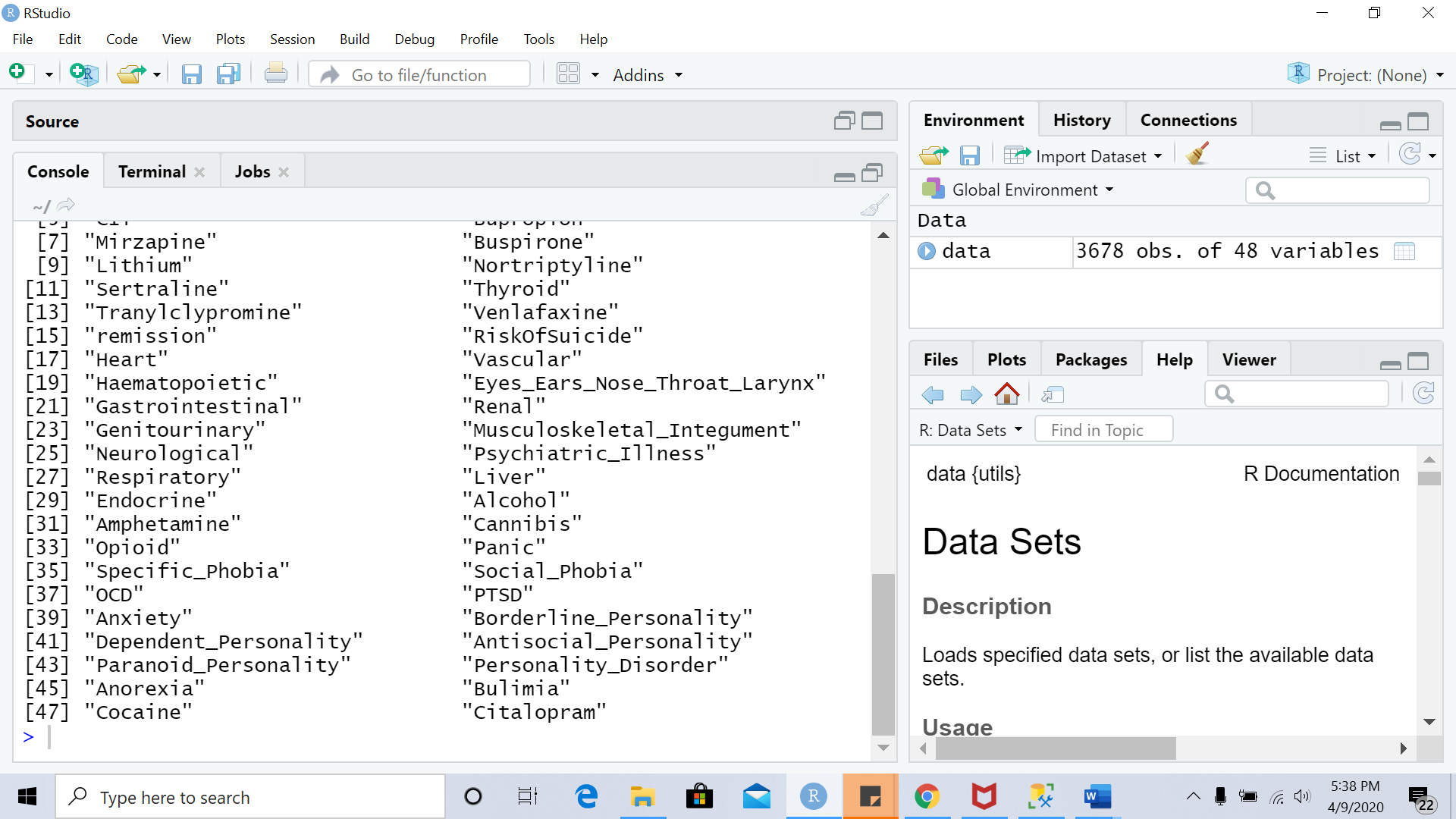
Data is having 3,678 entries, 48 total columns



ncol(data)

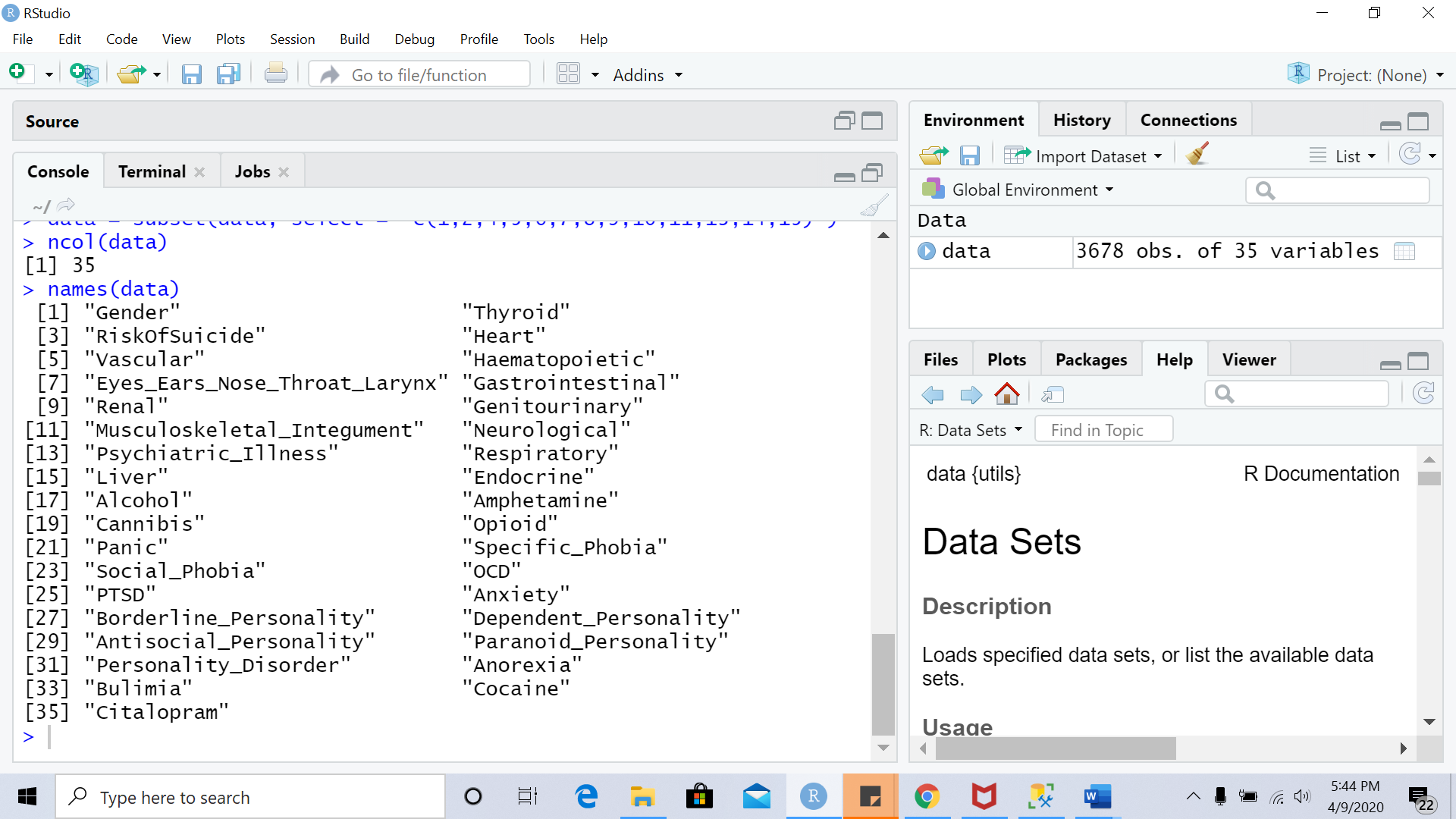
names(data)





#data preparation

data = subset(data, select = -c(1,2,4,5,6,7,8,9,10,11,13,14,15) )



#Data partition

set.seed(12345)

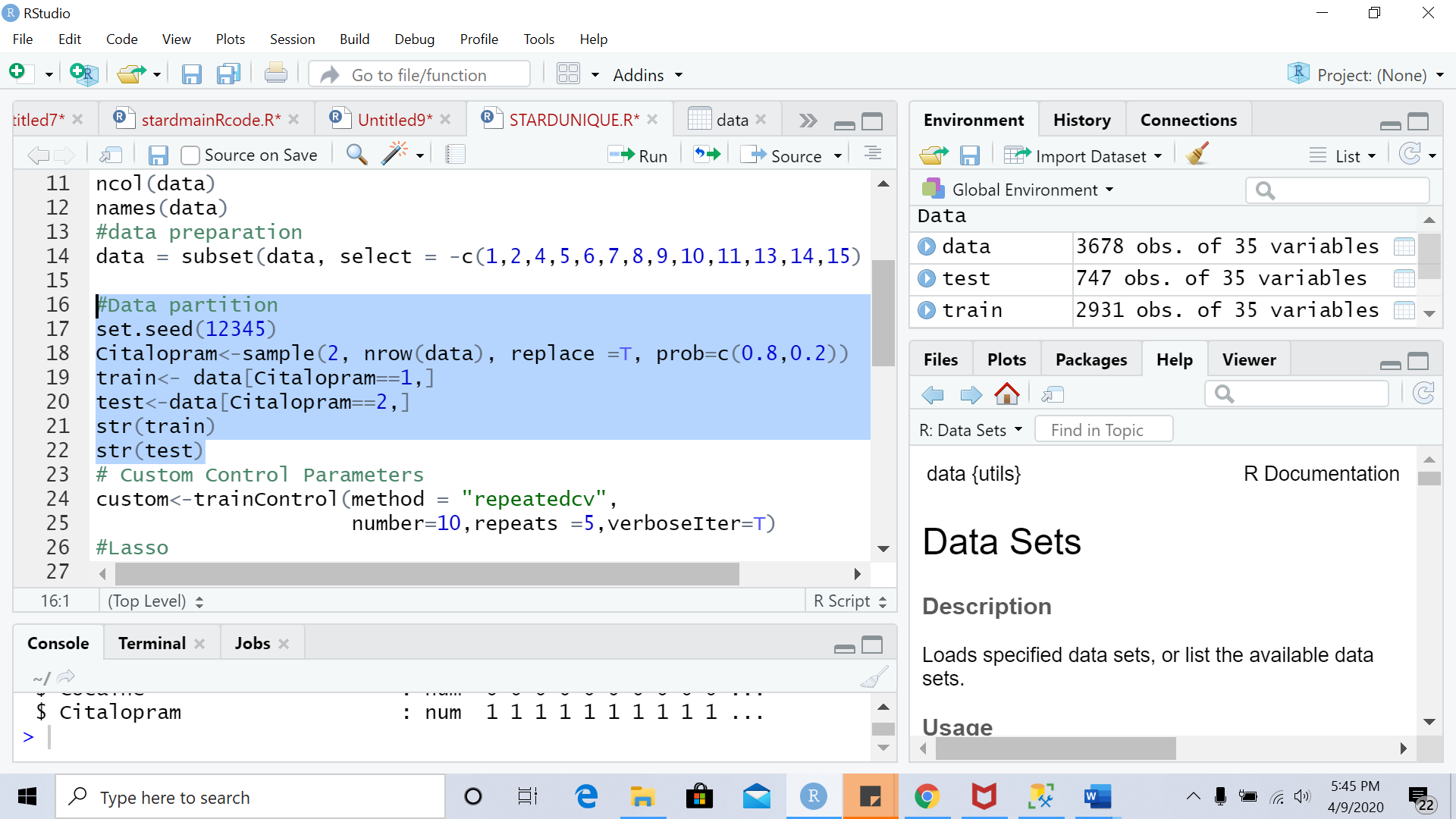
Citalopram<-sample(2, nrow(data), replace =T, prob=c(0.8,0.2))

train<- data[Citalopram==1,]

test<-data[Citalopram==2,]

str(train)

str(test)



# Custom Control Parameters

custom<-trainControl(method = "repeatedcv",

number=10,repeats =5,verboseIter=T)

#Lasso

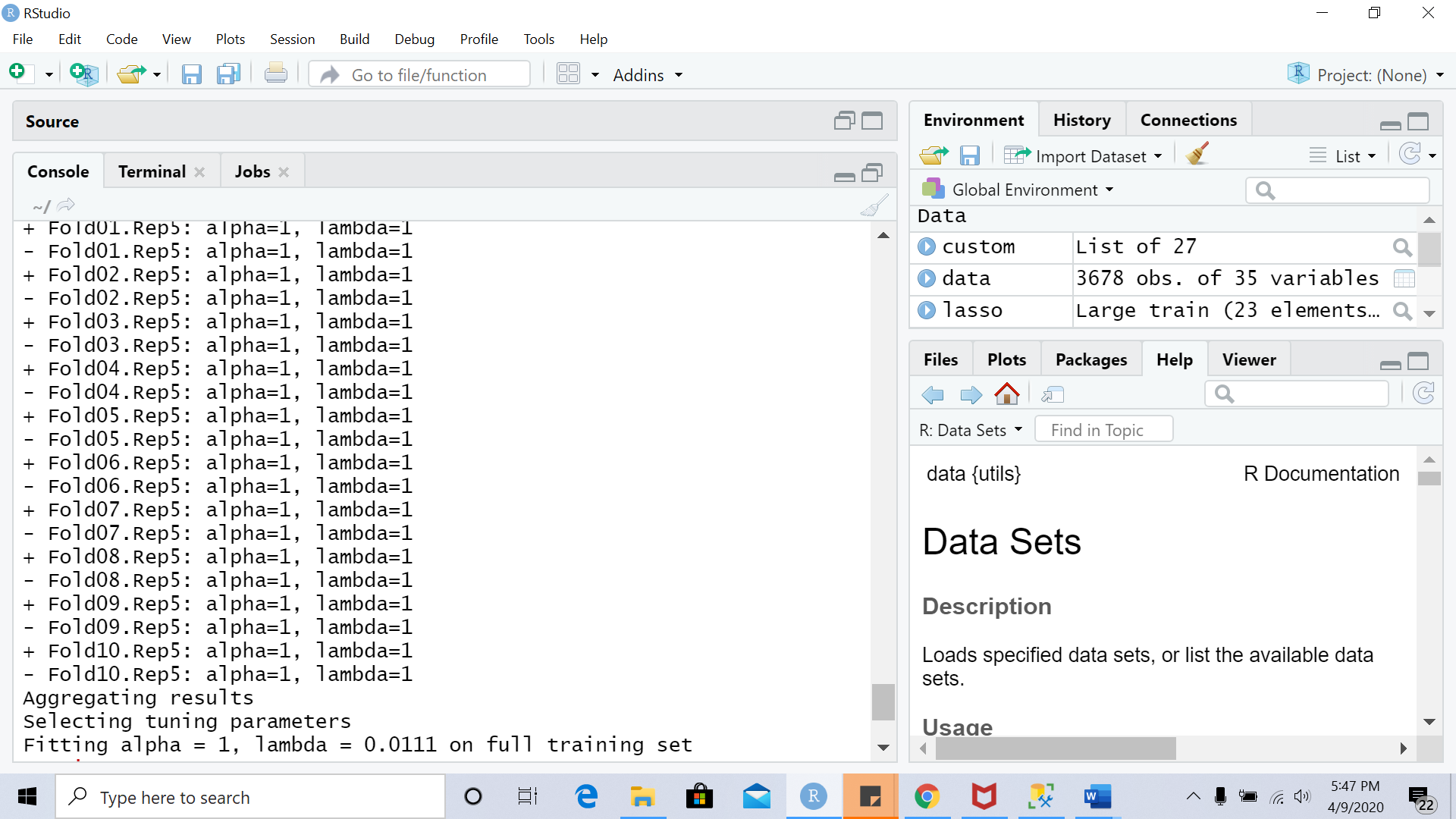
set.seed(12345)

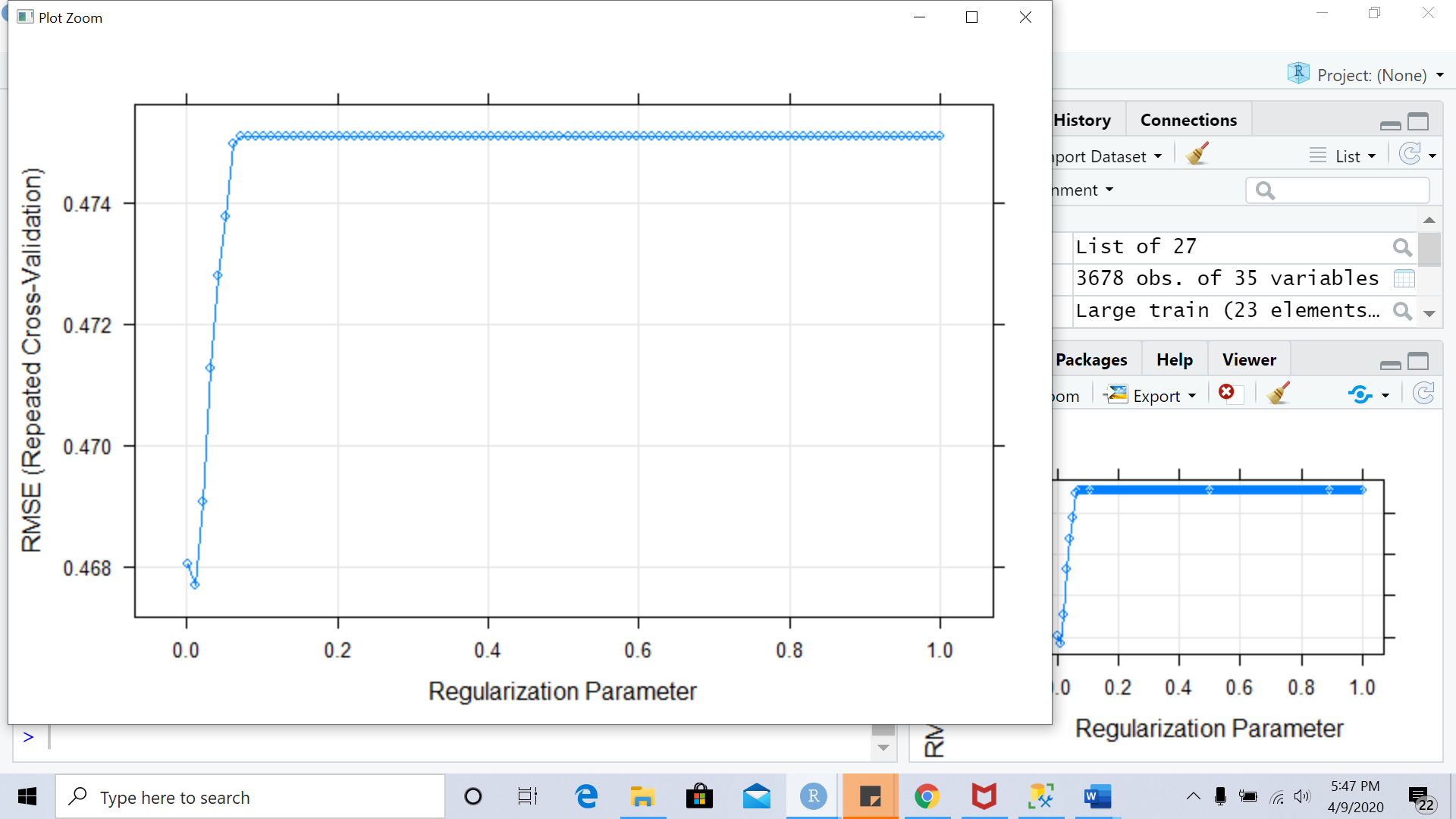
lasso<-train(Citalopram~.,

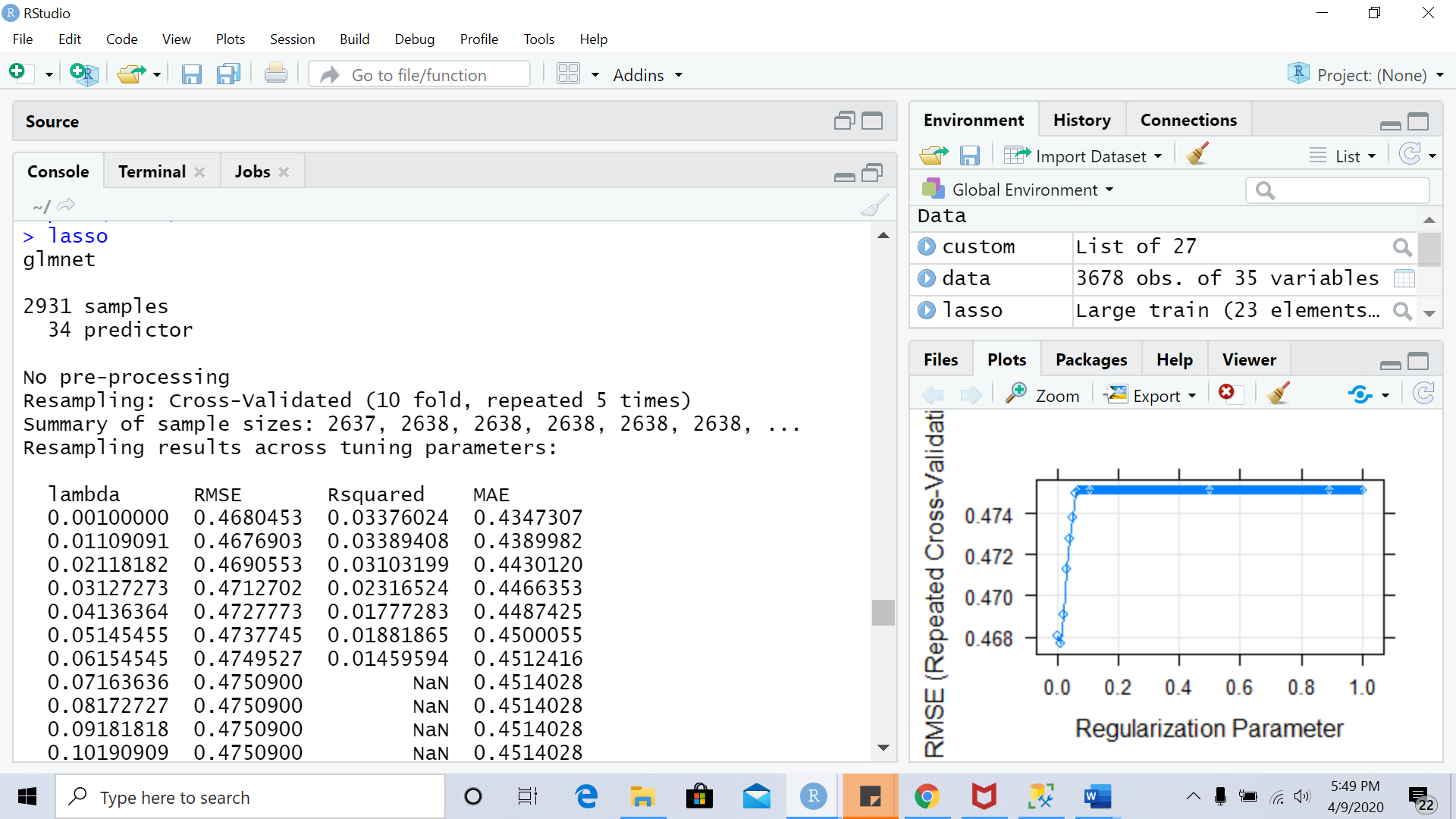
train,method='glmnet',

tuneGrid=expand.grid(alpha=1,lambda=seq(0.001,1,length=100)),

trControl=custom)







Tuning parameter 'alpha' was held constant at a value of 1

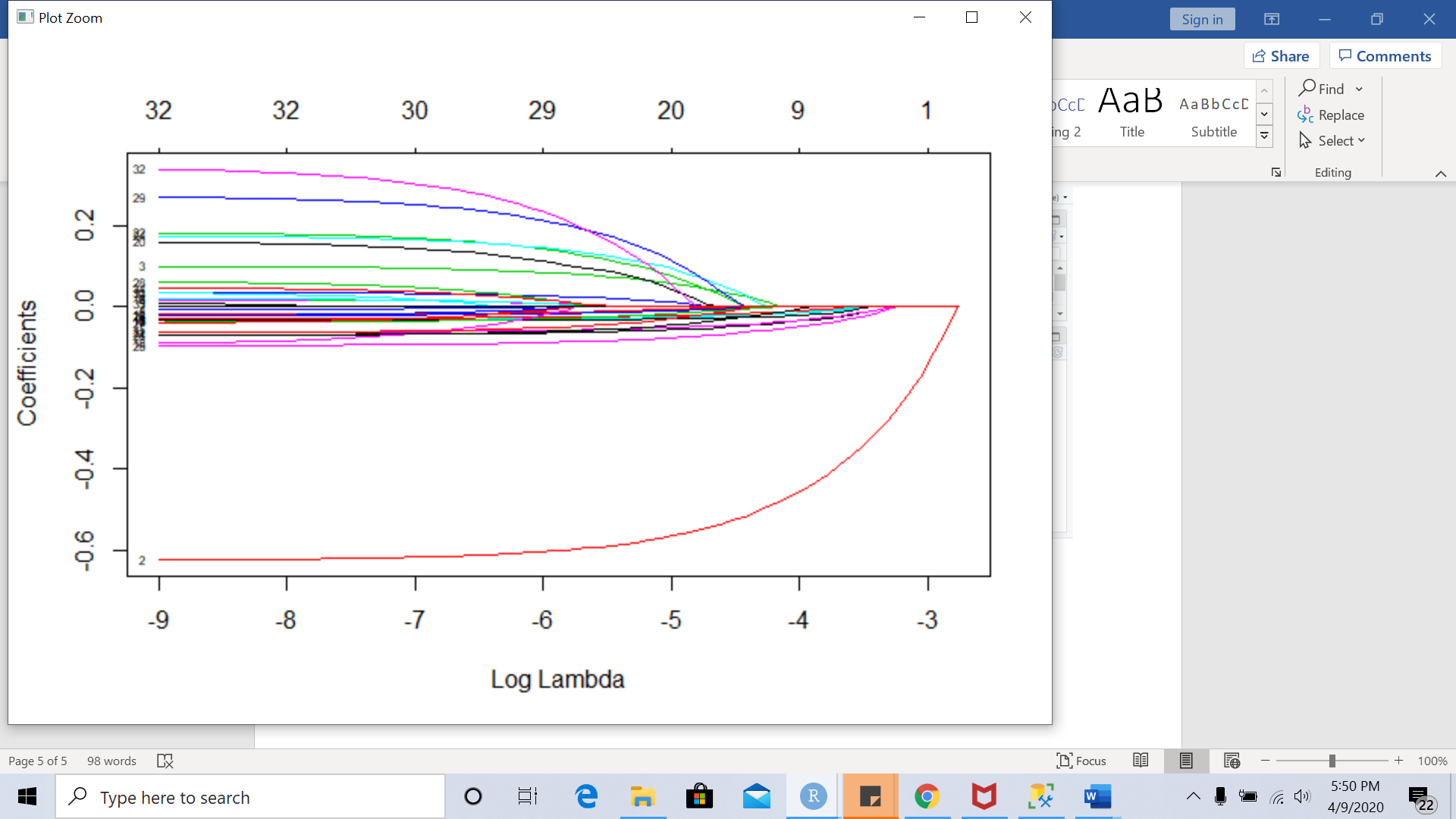
RMSE was used to select the optimal model using the

smallest value.

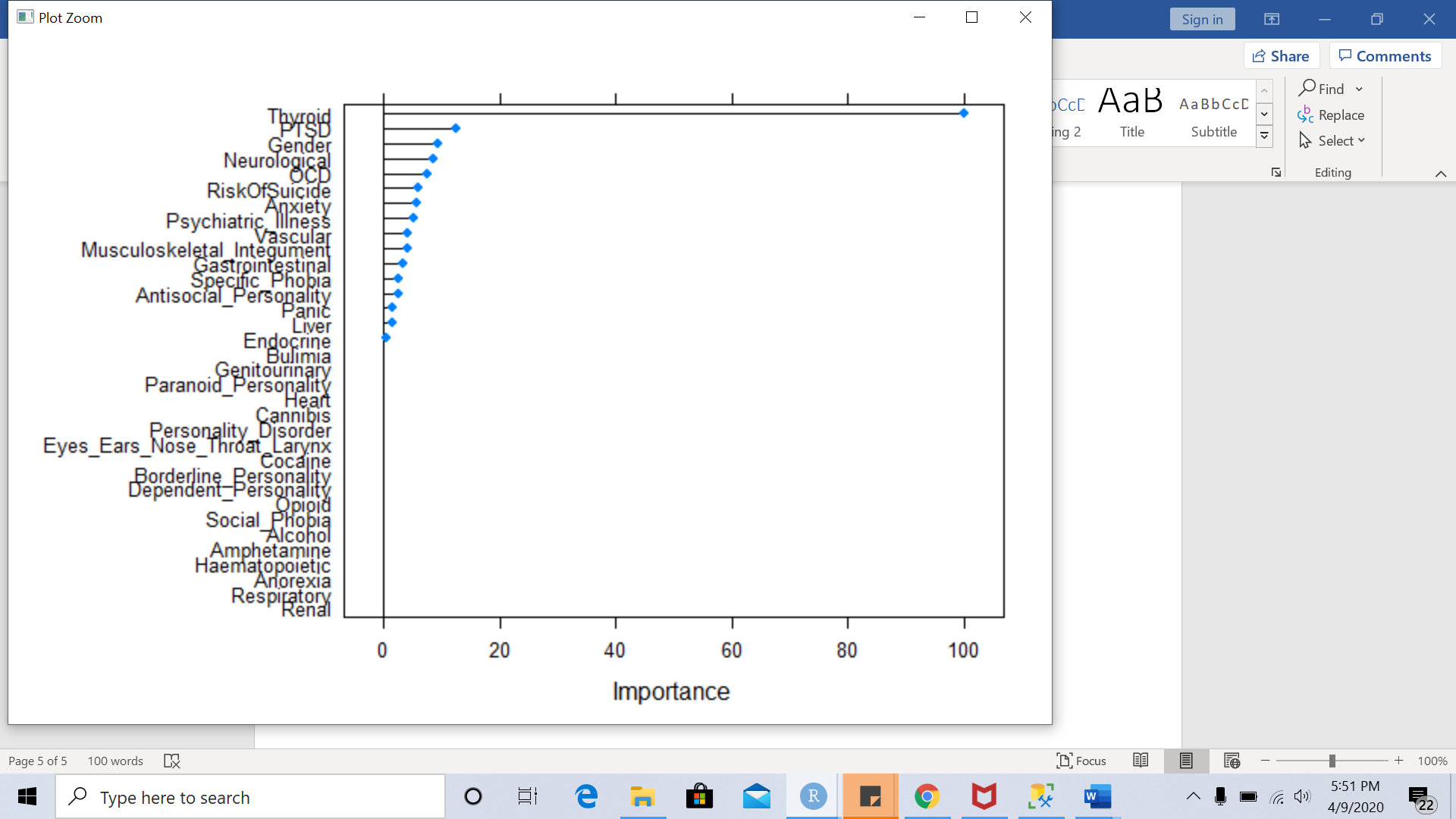
The final values used for the model were alpha = 1 and lambda

= 0.01109091.

plot(lasso$finalModel,xvar='lambda',label=T)



Important variables:



Coefficients:

|  |  |
| --- | --- |
| variables | coefficients |
| Thyroid | -0.523369941 |
| PTSD | -0.065271314 |
| Gender | -0.048383704 |
| Neurological | -0.044387301 |
| OCD | -0.038998683 |
| RiskOfSuicide | -0.030551429 |
| Anxiety | -0.029084408 |
| Psychiatric\_Illness | -0.026430132 |
| Vascular | -0.021954483 |
| Musculoskeletal\_Integument | -0.021041815 |
| Gastrointestinal | -0.017101078 |
| Specific\_Phobia | -0.013489655 |
| Antisocial\_Personality | -0.013187988 |
| Panic | -0.007955247 |
| Liver | -0.007073405 |
| Endocrine | -0.002530159 |
| Eyes\_Ears\_Nose\_Throat\_Larynx |  |
| Anorexia |  |
| Cocaine |  |
| Renal |  |
| Genitourinary |  |
| Personality\_Disorder |  |
| Respiratory |  |
| Dependent\_Personality |  |
| Cannibis |  |
| Opioid |  |
| Social\_Phobia |  |
| Heart |  |
| Haematopoietic |  |
| Alcohol |  |
| Amphetamine |  |
| Borderline\_Personality |  |
| Paranoid\_Personality |  |
| Bulimia |  |

#prediction

p1 <- predict(fm, train)

sqrt(mean((train$Citalopram-p1)^2))

p2 <- predict(fm, test)

sqrt(mean((train$Citalopram-p2)^2))

