

Check EMA

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4/3/2020

Setup

```
Sys.time()
```

```
## [1] "2020-04-30 16:32:31 CDT"
```

```
data_path <- "P:/StudyData/RISK/analysis/shared/data"
```

```
library(tidyverse)
library(janitor)
library(lmSupport)
library(knitr)
library(mice)
```

```
##Read in data
```

```
ema <- read_rds(file.path(data_path, "ds_ema.rds")) %>%
  glimpse()
```

```
## Rows: 43,803
## Columns: 18
## $ utc      <dbl> 1488467831, 1488486473, 1488510038, 1488544299, 14885502...
## $ subid    <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ start_date <dtm> 2017-03-02 15:17:11, 2017-03-02 20:27:53, 2017-03-03 03...
## $ end_date  <dtm> 2017-03-02 15:20:19, 2017-03-02 20:37:43, 2017-03-03 03...
## $ ema_1     <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ ema_1_1   <dtm> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,...
## $ ema_1_3   <dtm> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,...
## $ ema_1_5   <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
## $ ema_2     <dbl> 4, 5, 1, 2, 1, 3, 3, 2, 1, 3, 2, 3, 4, 1, 2, 2, 3, 3, 3,...
## $ ema_3     <dbl> 12, 11, 4, 4, 0, 2, 4, 0, 3, 1, 1, 4, 5, 1, 4, 2, 6, 3, ...
## $ ema_4     <dbl> 12, 10, 4, 4, 0, 0, 4, 0, 2, 4, 4, 4, 4, 1, 8, 2, 1, 3, ...
## $ ema_5     <dbl> 8, 8, 4, 8, 0, 8, 5, 5, 4, 3, 8, 7, 2, 4, 5, 4, 4, 2, 4,...
## $ ema_6     <dbl> 6, 7, 8, 6, 7, 9, 8, 6, 8, 7, 8, 8, 5, 7, 9, 8, 4, 8, 4,...
## $ ema_7     <dbl> 8, 7, 7, 3, 8, 6, 7, 3, 7, 8, 8, 7, 6, 8, 5, 7, 4, 4, 5,...
## $ ema_8     <dbl> 5, NA, NA, 5, NA, NA, NA, 4, NA, NA, 7, 5, NA, 6, NA, NA,...
## $ ema_9     <dbl> 5, NA, NA, 7, NA, NA, NA, 6, NA, NA, 5, 6, NA, 6, NA, NA,...
## $ ema_10    <dbl> 4, NA, NA, 4, NA, NA, NA, 4, NA, NA, 4, 5, NA, 5, NA, NA,...
## $ type      <int> 1, 2, 2, 1, 2, 2, 2, 1, 2, 2, 1, 1, 2, 1, 2, 2, 1, 2, 2,...
```

```
lapses <- read_rds(file.path(data_path, "ds_lapses.rds")) %>%
  glimpse()
```

```
## Rows: 12,883
## Columns: 3
## $ subid <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
## $ utc <dbl> 1488520800, 1488607200, 1488693600, 1488780000, 1488866400, 1...
## $ lapse <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...
```

```
id <- read_rds(file.path(data_path, "ds_id.rds")) %>%
  glimpse()
```

```
## Rows: 154
## Columns: 576
## $ utc <dbl> 1487176523, 1487364008, 1488906926, ...
## $ subid <int> 1, 2, 3, 5, 6, 7, 9, 10, 11, 15, 16,...
## $ dem_1 <dbl> 57, 35, 22, 39, 22, 38, 54, 38, 25, ...
## $ dem_2 <dbl> 2, 1, 1, 2, 2, 2, 2, 1, 2, 1, 1, 1, ...
## $ dem_3 <dbl> 5, 5, 5, 5, 5, 5, 5, 5, 6, 5, 1, 5, ...
## $ dem_3_1 <chr> NA, NA, NA, NA, NA, NA, NA, NA, "Fil...
## $ dem_4 <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, ...
## $ dem_4_1 <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
## $ dem_5 <dbl> 5, 4, 2, 5, 3, 6, 4, 6, 5, 5, 5, 5, ...
## $ dem_6 <dbl> 3, 1, 1, 1, 1, 1, 3, 1, 1, 1, 7, 1, ...
## $ dem_6_1 <dbl> NA, 1, 1, 1, 2, 1, NA, 1, 2, 1, NA, ...
## $ dem_7 <dbl> 12000, 36920, 20064, 130000, 5000, 7...
## $ dem_8 <dbl> 5, 5, 5, 1, 5, 1, 5, 1, 5, 5, 5, 5, ...
## $ dem2_2 <dbl> 2, 2, 4, 1, 2, 1, 0, 2, 2, 3, 2, 2, ...
## $ dem2_4 <dbl> 0, 1, 0, 1, NA, 1, 0, 0, 0, 1, 0, 0,...
## $ dem2_6 <dbl> 0, 4, 0, 2, NA, NA, 0, 2, 0, 0, 0, 0...
## $ dem2_8 <dbl> 0, 0, 0, NA, NA, NA, 0, 0, 0, 0, 0, ...
## $ auh_1 <dbl> 12, 14, 14, 16, 15, 14, 14, 17, 17, ...
## $ auh_2 <dbl> 56, 16, 18, 18, 18, 21, 16, 18, 21, ...
## $ auh_3 <dbl> 47, 19, 21, 35, 20, 33, 18, 37, 24, ...
## $ auh_4 <dbl> 47, 21, 21, 39, 21, 33, 25, 37, 24, ...
## $ auh_5 <dbl> 4, 10, 2, 0, 4, 6, 20, 2, 2, 1, 2, 4...
## $ auh_6_1 <dbl> 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, ...
## $ auh_6_2 <dbl> 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, ...
## $ auh_6_3 <dbl> 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, ...
## $ auh_6_4 <dbl> 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 1, 1, ...
## $ auh_6_5 <dbl> 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 1, ...
## $ auh_6_6 <dbl> 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 0, 1, ...
## $ auh_6_7 <dbl> 0, 0, 0, 1, 0, 1, 1, 0, 1, 0, 0, 0, ...
## $ auh_6_1_2 <chr> NA, NA, NA, "Work place provided emp...
## $ auh_7 <dbl> 2, 2, 1, 1, 2, 1, 2, 2, 1, 1, 1, 1, ...
## $ auh_7_1_1_med1 <chr> "Gabapentin", "Naltrexone", NA, NA, ...
## $ auh_7_1_2_med2 <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
## $ auh_7_1_3_med3 <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
## $ auh_7_1_4_med4 <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, ...
## $ auh_8_month <dbl> 1, 1, 2, 5, 4, 5, 5, 6, 6, 7, 9, 9, ...
## $ auh_8_day <dbl> 18, 28, 9, 22, 30, 12, 22, 18, 29, 2...
## $ auh_8_year <dbl> 2017, 2017, 2017, 2017, 2017, 2017, ...
```

## \$ auh_9	<dbl> 5, 7, 3, 2, 6, 5, 6, 4, 3, 6, 4, 4, ...
## \$ auh_10	<dbl> 5, 5, 3, 1, 6, 5, 6, 1, 2, 3, 2, 4, ...
## \$ auh_11	<dbl> 16, 6, 7, 4, 10, 8, 10, 2, 5, 3, 5, ...
## \$ auh_12	<dbl> 6, 7, 5, 4, 7, 6, 7, 5, 4, 7, 7, 5, ...
## \$ auh_13	<dbl> 6, 5, 5, 1, 7, 6, 7, 2, 1, 5, 4, 3, ...
## \$ auh_14	<dbl> 24, 6, 10, 4, 12, 10, 20, 4, 6, 4, 5...
## \$ dsm5_1	<dbl> 2, 1, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, ...
## \$ dsm5_2	<dbl> 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ dsm5_3	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ dsm5_4	<dbl> 2, 2, 2, 1, 2, 2, 2, 2, 1, 1, 1, 1, ...
## \$ dsm5_5	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ dsm5_6	<dbl> 2, 1, 2, 1, 2, 1, 2, 2, 1, 2, 2, 2, ...
## \$ dsm5_7	<dbl> 2, 1, 2, 2, 2, 1, 2, 1, 1, 2, 2, 1, ...
## \$ dsm5_8	<dbl> 1, 1, 2, 1, 2, 1, 2, 2, 2, 2, 1, 1, ...
## \$ dsm5_9	<dbl> 2, 1, 1, 2, 2, 1, 2, 1, 1, 1, 1, 1, ...
## \$ dsm5_10	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ dsm5_11	<dbl> 2, 2, 2, 1, 2, 1, 2, 1, 1, 2, 2, 2, ...
## \$ yap_1	<dbl> 8, 10, 1, 8, 9, 2, 2, 3, 1, 6, 2, 6,...
## \$ yap_2	<dbl> 8, 10, 9, 7, 10, 7, 6, 6, 6, 5, 10, ...
## \$ yap_3	<dbl> 8, 6, 10, 6, 9, 6, 6, 3, 3, 3, 7, 10...
## \$ yap_4	<dbl> 6, 1, 8, 1, 10, 4, 2, 4, 1, 4, 7, 2,...
## \$ yap_5	<dbl> 3, 3, 9, 1, 8, 5, 6, 7, 4, 4, 5, 2, ...
## \$ yap_6	<dbl> 1, 5, 6, 2, 3, 1, 2, 1, 1, 3, 1, 1, ...
## \$ yap_7	<dbl> 3, 2, 2, 1, 4, 1, 4, 1, 1, 1, 1, 1, ...
## \$ yap_8	<dbl> 1, 2, 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, ...
## \$ yap_9	<dbl> 1, 1, 4, 4, 5, 1, 3, 1, 1, 2, 1, 1, ...
## \$ yap_10	<dbl> 5, 5, 5, 5, 5, 4, 3, 2, 1, 4, 5, 1, ...
## \$ yap_11	<dbl> 5, 5, 4, 5, 5, 2, 2, 1, 1, 4, 5, 1, ...
## \$ yap_12	<dbl> 3, 2, 3, 1, 5, 1, 4, 1, 4, 2, 5, 4, ...
## \$ yap_13	<dbl> 1, 2, 5, 1, 5, 2, 3, 5, 1, 2, 2, 1, ...
## \$ yap_14	<dbl> 1, 2, 2, 2, 5, 2, 2, 2, 1, 2, 4, 5, ...
## \$ yap_15	<dbl> 1, 1, 2, 1, 5, 2, 2, 2, 1, 2, 2, 1, ...
## \$ yap_16	<dbl> 2, 2, 1, 2, 3, 1, 2, 1, 1, 1, 2, 1, ...
## \$ yap_17	<dbl> 1, 2, 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, ...
## \$ yap_18	<dbl> 5, 2, 5, 5, 5, 5, 5, 3, 3, 4, 5, 5, ...
## \$ yap_19	<dbl> 4, 2, 4, 1, 5, 1, 5, 2, 1, 4, 3, 1, ...
## \$ yap_20	<dbl> 1, 2, 5, 3, 5, 1, 5, 1, 1, 1, 5, 1, ...
## \$ yap_21	<dbl> 3, 2, 3, 1, 3, 1, 3, 3, 3, 3, 3, 3, ...
## \$ yap_22	<dbl> 3, 3, 3, 1, 3, 3, 3, 3, 1, 3, 3, 3, ...
## \$ yap_23	<dbl> 3, 3, 3, 3, 3, 3, 3, 3, 1, 3, 3, 3, ...
## \$ yap_24	<dbl> 3, 1, 3, 1, 3, 3, 3, 3, 1, 3, 1, 3, ...
## \$ yap_25	<dbl> 3, 3, 1, 3, 3, 3, 3, 3, 1, 3, 3, 3, ...
## \$ yap_26	<dbl> 3, 3, 1, 3, 3, 2, 3, 1, 1, 2, 1, 2, ...
## \$ yap_27	<dbl> 3, 3, 3, 3, 3, 3, 3, 3, 1, 3, 3, 3, ...
## \$ assist_1_1	<dbl> 2, 2, 2, 1, 2, 2, 2, 2, 1, 2, 2, 2, ...
## \$ assist_1_2	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, ...
## \$ assist_1_3	<dbl> 2, 2, 2, 1, 2, 1, 2, 1, 1, 1, 2, 1, ...
## \$ assist_1_4	<dbl> 1, 2, 2, 1, 2, 1, 2, 1, 1, 1, 2, 1, ...
## \$ assist_1_5	<dbl> 1, 1, 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, ...
## \$ assist_1_6	<dbl> 2, 2, 2, 1, 2, 1, 2, 1, 1, 1, 1, 2, ...
## \$ assist_1_7	<dbl> 2, 2, 2, 1, 2, 2, 2, 1, 1, 1, 2, 1, ...
## \$ assist_1_8	<dbl> 2, 2, 2, 1, 2, 1, 2, 1, 1, 1, 2, 1, ...
## \$ assist_4_1	<dbl> 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, ...
## \$ assist_4_2	<dbl> 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, ...

## \$ assist_4_3	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_4_4	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_4_5	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_4_6	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_4_7	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_4_8	<dbl> 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_1	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_2	<dbl> 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_3	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_4	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_5	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_6	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_7	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_5_8	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_6_1	<dbl> 1, 1, 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, ...
## \$ assist_6_2	<dbl> 1, 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 1, ...
## \$ assist_6_3	<dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_6_4	<dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_6_5	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_6_6	<dbl> 1, 1, 4, 1, 1, 1, 1, 1, 1, 1, 1, 2, ...
## \$ assist_6_7	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_6_8	<dbl> 3, 1, 4, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_1	<dbl> 3, 1, 5, 1, 4, 1, 3, 1, 1, 1, 2, 1, ...
## \$ assist_7_2	<dbl> 1, 1, 5, 1, 2, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_3	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_4	<dbl> 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_5	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_6	<dbl> 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, 1, 2, ...
## \$ assist_7_7	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_7_8	<dbl> 2, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ assist_8	<dbl> 3, 1, 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, ...
## \$ scl90_1	<dbl> 3, 2, 2, 2, 3, 2, 1, 3, 2, 4, 2, 1, ...
## \$ scl90_2	<dbl> 3, 4, 3, 3, 5, 2, 1, 3, 1, 3, 2, 2, ...
## \$ scl90_3	<dbl> 4, 1, 1, 2, 5, 2, 3, 2, 4, 4, 3, 2, ...
## \$ scl90_4	<dbl> 2, 3, 1, 2, 1, 1, 1, 2, 1, 1, 1, 1, ...
## \$ scl90_5	<dbl> 2, 3, 1, 1, 3, 1, 1, 3, 1, 1, 1, 2, ...
## \$ scl90_6	<dbl> 2, 3, 1, 3, 4, 3, 2, 1, 3, 3, 2, 2, ...
## \$ scl90_7	<dbl> 2, 1, 1, 4, 1, 1, 1, 1, 2, 1, 1, 1, ...
## \$ scl90_8	<dbl> 2, 1, 1, 4, 2, 1, 1, 1, 2, 3, 2, 1, ...
## \$ scl90_9	<dbl> 3, 4, 2, 3, 4, 2, 2, 3, 1, 4, 2, 4, ...
## \$ scl90_10	<dbl> 2, 2, 1, 3, 4, 1, 1, 3, 1, 1, 1, 2, ...
## \$ scl90_11	<dbl> 3, 3, 2, 4, 5, 3, 1, 2, 3, 4, 2, 2, ...
## \$ scl90_12	<dbl> 2, 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_13	<dbl> 1, 2, 1, 1, 2, 1, 1, 1, 1, 1, 1, 2, ...
## \$ scl90_14	<dbl> 2, 5, 2, 2, 5, 2, 4, 3, 1, 3, 1, 2, ...
## \$ scl90_15	<dbl> 2, 1, 1, 1, 2, 1, 2, 1, 1, 1, 1, 2, ...
## \$ scl90_16	<dbl> 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_17	<dbl> 2, 1, 2, 1, 3, 1, 1, 1, 1, 2, 1, 1, ...
## \$ scl90_18	<dbl> 2, 3, 1, 2, 2, 1, 1, 1, 5, 2, 4, 1, ...
## \$ scl90_19	<dbl> 2, 1, 1, 3, 1, 1, 1, 2, 3, 2, 1, 1, ...
## \$ scl90_20	<dbl> 2, 1, 1, 3, 1, 1, 1, 2, 2, 3, 1, 1, ...
## \$ scl90_21	<dbl> 2, 1, 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, ...
## \$ scl90_22	<dbl> 2, 1, 1, 4, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_23	<dbl> 2, 3, 1, 2, 3, 1, 1, 2, 1, 3, 1, 2, ...

## \$ scl90_24	<dbl> 2, 2, 1, 1, 3, 1, 1, 1, 1, 4, 1, 2, ...
## \$ scl90_25	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_26	<dbl> 3, 1, 2, 4, 5, 1, 2, 2, 3, 4, 2, 2, ...
## \$ scl90_27	<dbl> 2, 4, 2, 3, 4, 5, 1, 3, 1, 1, 2, 4, ...
## \$ scl90_28	<dbl> 2, 3, 1, 3, 4, 1, 3, 2, 1, 3, 2, 1, ...
## \$ scl90_29	<dbl> 3, 4, 1, 4, 5, 2, 3, 2, 4, 2, 3, 3, ...
## \$ scl90_30	<dbl> 3, 2, 1, 2, 5, 2, 3, 2, 3, 2, 3, 2, ...
## \$ scl90_31	<dbl> 4, 4, 2, 2, 5, 2, 2, 2, 3, 2, 2, 2, ...
## \$ scl90_32	<dbl> 2, 3, 1, 2, 5, 1, 3, 3, 1, 1, 4, 2, ...
## \$ scl90_33	<dbl> 2, 1, 1, 2, 4, 1, 1, 2, 2, 2, 1, 2, ...
## \$ scl90_34	<dbl> 2, 1, 2, 4, 1, 1, 1, 1, 2, 2, 2, 2, ...
## \$ scl90_35	<dbl> 1, 1, 1, 1, 2, 1, 1, 1, 2, 1, 1, 1, ...
## \$ scl90_36	<dbl> 2, 2, 2, 2, 3, 2, 1, 3, 3, 1, 3, 2, ...
## \$ scl90_37	<dbl> 2, 1, 2, 2, 3, 2, 2, 2, 2, 3, 3, 3, ...
## \$ scl90_38	<dbl> 2, 2, 1, 4, 5, 1, 1, 2, 1, 3, 1, 2, ...
## \$ scl90_39	<dbl> 2, 3, 1, 2, 4, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_40	<dbl> 2, 1, 2, 2, 3, 2, 1, 2, 1, 2, 1, 3, ...
## \$ scl90_41	<dbl> 2, 2, 1, 2, 2, 2, 2, 3, 2, 2, 2, 3, ...
## \$ scl90_42	<dbl> 3, 4, 1, 3, 1, 2, 2, 3, 1, 2, 1, 4, ...
## \$ scl90_43	<dbl> 2, 1, 1, 2, 1, 1, 1, 2, 2, 1, 1, 1, ...
## \$ scl90_44	<dbl> 3, 1, 1, 3, 5, 3, 2, 2, 2, 1, 2, 2, ...
## \$ scl90_45	<dbl> 2, 3, 1, 4, 5, 1, 1, 2, 2, 3, 2, 2, ...
## \$ scl90_46	<dbl> 2, 4, 2, 3, 3, 1, 2, 3, 2, 2, 2, 3, ...
## \$ scl90_47	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_48	<dbl> 2, 1, 1, 1, 3, 3, 1, 2, 1, 3, 1, 2, ...
## \$ scl90_49	<dbl> 2, 1, 1, 2, 1, 1, 1, 2, 1, 1, 1, 1, ...
## \$ scl90_50	<dbl> 1, 1, 1, 1, 3, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_51	<dbl> 2, 4, 1, 3, 3, 1, 1, 2, 1, 3, 1, 1, ...
## \$ scl90_52	<dbl> 2, 4, 1, 1, 1, 1, 1, 3, 1, 2, 1, 1, ...
## \$ scl90_53	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ scl90_54	<dbl> 3, 1, 1, 2, 4, 1, 3, 1, 3, 2, 3, 2, ...
## \$ scl90_55	<dbl> 2, 3, 1, 4, 5, 3, 2, 3, 1, 4, 2, 2, ...
## \$ scl90_56	<dbl> 2, 2, 1, 3, 3, 1, 2, 2, 1, 2, 1, 1, ...
## \$ scl90_57	<dbl> 3, 4, 1, 3, 4, 2, 1, 3, 1, 4, 1, 2, ...
## \$ scl90_58	<dbl> 1, 1, 1, 2, 1, 1, 1, 1, 1, 4, 1, 1, ...
## \$ scl90_59	<dbl> 2, 2, 1, 1, 3, 1, 2, 1, 2, 1, 2, 2, ...
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## \$ mps_60	<dbl> 1, 1, 2, 2, 1, 2, 1, 1, 1, 2, 1, 1, ...
## \$ mps_61	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_62	<dbl> 2, 1, 2, 2, 1, 2, 1, 2, 2, 2, 2, 1, ...
## \$ mps_63	<dbl> 2, 2, 2, 1, 1, 1, 2, 2, 2, 1, 1, 1, ...
## \$ mps_64	<dbl> 1, 1, 1, 1, 1, 1, 2, 2, 1, 2, 2, 1, ...
## \$ mps_65	<dbl> 2, 1, 1, 1, 2, 1, 2, 2, 2, 1, 2, 1, ...
## \$ mps_66	<dbl> 1, 1, 1, 2, 2, 1, 1, 2, 2, 1, 2, 2, ...
## \$ mps_67	<dbl> 1, 1, 2, 1, 1, 1, 2, 1, 2, 1, 1, 1, ...
## \$ mps_68	<dbl> 1, 2, 2, 1, 1, 2, 2, 2, 1, 1, 1, 1, ...
## \$ mps_69	<dbl> 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, ...
## \$ mps_70	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, ...
## \$ mps_71	<dbl> 2, 2, 1, 1, 2, 1, 2, 1, 2, 2, 2, 1, ...
## \$ mps_72	<dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 2, ...
## \$ mps_73	<dbl> 2, 2, 2, 1, 2, 2, 2, 1, 1, 2, 1, 2, ...
## \$ mps_74	<dbl> 1, 2, 2, 2, 1, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_75	<dbl> 1, 2, 2, 2, 2, 1, 1, 1, 2, 2, 1, 2, ...
## \$ mps_76	<dbl> 2, 1, 2, 2, 1, 1, 1, 1, 2, 1, 2, 1, ...
## \$ mps_77	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_78	<dbl> 2, 2, 1, 1, 2, 1, 2, 1, 1, 1, 1, 2, ...
## \$ mps_79	<dbl> 2, 1, 2, 2, 2, 2, 1, 2, 2, 2, 2, 1, ...
## \$ mps_80	<dbl> 2, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_81	<dbl> 1, 1, 1, 2, 2, 2, 2, 2, 2, 1, 1, 2, ...
## \$ mps_82	<dbl> 2, 2, 1, 2, 2, 1, 1, 1, 2, 1, 2, 2, ...
## \$ mps_83	<dbl> 2, 1, 2, 2, 1, 1, 2, 2, 2, 2, 1, 2, ...

## \$ mps_84	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_85	<dbl> 2, 1, 2, 2, 1, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_86	<dbl> 2, 1, 1, 2, 2, 2, 2, 2, 2, 1, 2, 2, ...
## \$ mps_87	<dbl> 2, 1, 1, 2, 1, 2, 1, 2, 2, 2, 1, 2, ...
## \$ mps_88	<dbl> 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_89	<dbl> 2, 2, 1, 1, 2, 1, 1, 2, 2, 1, 2, 2, ...
## \$ mps_90	<dbl> 2, 2, 1, 1, 2, 2, 1, 2, 2, 2, 1, 2, ...
## \$ mps_91	<dbl> 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 2, 1, ...
## \$ mps_92	<dbl> 1, 2, 1, 1, 1, 1, 2, 2, 2, 1, 2, 2, ...
## \$ mps_93	<dbl> 1, 1, 2, 2, 2, 1, 2, 1, 1, 1, 1, 1, ...
## \$ mps_94	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## \$ mps_95	<dbl> 2, 2, 2, 2, 1, 2, 2, 2, 1, 2, 2, 2, ...
## \$ mps_96	<dbl> 1, 1, 2, 1, 1, 2, 1, 1, 1, 1, 1, 2, ...
## \$ mps_97	<dbl> 2, 1, 1, 2, 1, 2, 1, 2, 2, 2, 1, 2, ...
## \$ mps_98	<dbl> 2, 2, 2, 1, 1, 1, 2, 2, 1, 1, 2, 1, ...
## \$ mps_99	<dbl> 2, 1, 2, 2, 1, 1, 2, 2, 2, 2, 2, 2, ...
## \$ mps_100	<dbl> 2, 2, 2, 1, 2, 1, 2, 1, 2, 1, 2, 2, ...
## \$ mps_101	<dbl> 2, 2, 1, 2, 2, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_102	<dbl> 1, 1, 1, 2, 1, 1, 1, 2, 2, 1, 2, 1, ...
## \$ mps_103	<dbl> 2, 2, 1, 2, 2, 2, 1, 2, 2, 1, 2, 2, ...
## \$ mps_104	<dbl> 2, 2, 1, 1, 2, 1, 2, 1, 2, 1, 1, 1, ...
## \$ mps_105	<dbl> 2, 1, 1, 1, 2, 1, 1, 1, 1, 1, 2, 1, ...
## \$ mps_106	<dbl> 1, 1, 2, 1, 1, 2, 2, 1, 2, 1, 2, 2, ...
## \$ mps_107	<dbl> 2, 2, 1, 1, 1, 1, 1, 2, 2, 2, 2, 1, ...
## \$ mps_108	<dbl> 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, ...
## \$ mps_109	<dbl> 1, 1, 2, 1, 1, 2, 1, 1, 2, 2, 1, 2, ...
## \$ mps_110	<dbl> 1, 2, 1, 2, 2, 2, 1, 1, 2, 2, 1, 2, ...
## \$ mps_111	<dbl> 1, 2, 1, 2, 2, 2, 1, 2, 2, 1, 2, 2, ...
## \$ mps_112	<dbl> 2, 1, 2, 2, 2, 2, 1, 1, 2, 2, 2, 2, ...
## \$ mps_113	<dbl> 2, 2, 1, 2, 2, 1, 1, 2, 2, 1, 2, 2, ...
## \$ mps_114	<dbl> 1, 2, 2, 1, 1, 1, 1, 2, 2, 2, 1, 2, ...
## \$ mps_115	<dbl> 1, 2, 1, 1, 2, 1, 1, 1, 2, 1, 1, 2, ...
## \$ mps_116	<dbl> 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_117	<dbl> 1, 1, 1, 2, 1, 2, 1, 1, 2, 2, 1, 1, ...
## \$ mps_118	<dbl> 1, 1, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, ...
## \$ mps_119	<dbl> 2, 1, 2, 2, 1, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_120	<dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1, ...
## \$ mps_121	<dbl> 2, 1, 2, 2, 1, 2, 2, 2, 2, 2, 1, 2, ...
## \$ mps_122	<dbl> 1, 2, 2, 1, 1, 1, 2, 2, 2, 1, 2, 2, ...
## \$ mps_123	<dbl> 2, 2, 2, 2, 1, 2, 2, 1, 2, 2, 1, 2, ...
## \$ mps_124	<dbl> 1, 2, 1, 2, 2, 1, 2, 1, 1, 1, 2, 1, ...
## \$ mps_125	<dbl> 2, 1, 1, 1, 2, 1, 1, 2, 1, 2, 1, 2, ...
## \$ mps_126	<dbl> 1, 2, 2, 1, 2, 1, 1, 2, 2, 2, 2, 2, ...
## \$ mps_127	<dbl> 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, ...
## \$ mps_128	<dbl> 1, 2, 2, 2, 1, 1, 2, 2, 2, 1, 2, 2, ...
## \$ mps_129	<dbl> 1, 1, 1, 1, 2, 2, 1, 2, 1, 2, 1, 2, ...
## \$ mps_130	<dbl> 1, 2, 1, 1, 1, 1, 1, 2, 2, 2, 1, 2, ...
## \$ mps_131	<dbl> 2, 2, 1, 2, 2, 2, 2, 2, 1, 2, 1, 2, ...
## \$ mps_132	<dbl> 2, 2, 1, 2, 1, 2, 2, 2, 1, 2, 2, 2, ...
## \$ mps_133	<dbl> 1, 1, 2, 2, 1, 2, 1, 2, 2, 2, 2, 2, ...
## \$ mps_134	<dbl> 2, 1, 1, 1, 1, 2, 2, 2, 1, 2, 2, 1, ...
## \$ mps_135	<dbl> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1, ...
## \$ mps_136	<dbl> 2, 2, 1, 1, 1, 1, 2, 2, 1, 1, 2, 1, ...
## \$ mps_137	<dbl> 2, 1, 1, 1, 2, 2, 1, 2, 2, 1, 2, 2, ...

```

## $ mps_138 <dbl> 1, 1, 1, 1, 1, 1, 1, 2, 2, 1, 2, 1, ...
## $ mps_139 <dbl> 1, 2, 1, 1, 1, 1, 1, 1, 2, 1, 1, 2, ...
## $ mps_140 <dbl> 1, 2, 2, 2, 1, 2, 1, 1, 2, 2, 1, 1, ...
## $ mps_141 <dbl> 2, 2, 2, 1, 1, 2, 2, 2, 2, 1, 1, 2, ...
## $ mps_142 <dbl> 2, 2, 1, 2, 2, 1, 2, 2, 2, 1, 2, 2, ...
## $ mps_143 <dbl> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## $ mps_144 <dbl> 1, 1, 2, 2, 1, 2, 1, 2, 2, 2, 1, 2, ...
## $ mps_145 <dbl> 1, 1, 1, 2, 1, 1, 2, 2, 1, 1, 2, 1, ...
## $ mps_146 <dbl> 2, 2, 2, 2, 1, 2, 1, 1, 2, 2, 1, 1, ...
## $ mps_147 <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## $ mps_148 <dbl> 2, 2, 1, 2, 2, 1, 2, 2, 1, 1, 1, 1, ...
## $ mps_149 <dbl> 2, 2, 1, 2, 2, 1, 2, 2, 1, 2, 1, 2, ...
## $ mps_150 <dbl> 1, 2, 1, 1, 2, 1, 1, 2, 2, 1, 1, 2, ...
## $ mps_151 <dbl> 1, 2, 1, 1, 1, 1, 1, 1, 1, 2, 1, 2, ...
## $ mps_152 <dbl> 1, 1, 2, 1, 2, 2, 2, 1, 1, 1, 2, 2, ...
## $ mps_153 <dbl> 1, 1, 2, 1, 2, 1, 1, 1, 1, 1, 2, 2, ...
## $ mps_154 <dbl> 2, 2, 1, 2, 2, 1, 1, 1, 2, 1, 2, 2, ...
## $ mps_155 <dbl> 2, 1, 1, 2, 1, 1, 2, 2, 1, 2, 2, 2, ...
## $ scale_dem_age <dbl> 57, 35, 22, 39, 22, 38, 54, 38, 25, ...
## $ scale_dem_sex <chr> "female", "male", "male", "female", ...
## $ scale_dem_race <chr> "white", "white", "white", "white", ...
## $ scale_dem_hispanic <chr> "no", "no", "no", "no", "no", "no", ...
## $ scale_dem_educ <chr> "college", "twoyearcollege", "hs", "...
## $ scale_dem_employ_type <chr> "disabled", "disabled", "disabled", ...
## $ scale_dem_employed <chr> "notemployed", "parttime", "parttime...
## $ scale_dem_income <dbl> 12000, 36920, 20064, 130000, 5000, 7...
## $ scale_dem_marital <chr> "nevermarried", "nevermarried", "nev...
## $ scale_dem2_liveparents <dbl> 2, 2, 4, 1, 2, 1, 0, 2, 2, 3, 2, 2, ...
## $ scale_dem2_deadparents <dbl> 0, 1, 0, 1, NA, 1, 0, 0, 0, 1, 0, 0,...
## $ scale_dem2_livekids <dbl> 0, 4, 0, 2, NA, NA, 0, 2, 0, 0, 0, 0...
## $ scale_dem2_deadkids <dbl> 0, 0, 0, NA, NA, NA, 0, 0, 0, 0, 0, ...
## $ scale_auh_age_first <dbl> 12, 14, 14, 16, 15, 14, 14, 17, 17, ...
## $ scale_auh_age_regular <dbl> 56, 16, 18, 18, 18, 21, 16, 18, 21, ...
## $ scale_auh_age_problem <dbl> 47, 19, 21, 35, 20, 33, 18, 37, 24, ...
## $ scale_auh_age_firstquit <dbl> 47, 21, 21, 39, 21, 33, 25, 37, 24, ...
## $ scale_auh_times_quit <dbl> 4, 10, 2, 0, 4, 6, 20, 2, 2, 1, 2, 4...
## $ scale_auh_program_longres <chr> "no", "no", "no", "no", "no", "no", ...
## $ scale_auh_program_shortres <chr> "yes", "no", "no", "no", "yes", "no"...
## $ scale_auh_program_outpatient <chr> "no", "yes", "no", "no", "yes", "no"...
## $ scale_auh_program_individual <chr> "no", "yes", "no", "yes", "yes", "ye...
## $ scale_auh_program_group <chr> "no", "no", "yes", "yes", "yes", "ye...
## $ scale_auh_program_selfhelp <chr> "no", "yes", "no", "yes", "yes", "ye...
## $ scale_auh_program_other <chr> "no", "no", "no", "yes", "no", "yes"...
## $ scale_auh_program_total <dbl> 1, 3, 1, 4, 5, 4, 7, 1, 1, 3, 2, 4, ...
## $ scale_auh_alcmeds <chr> "yes", "yes", "no", "no", "yes", "no...
## $ scale_auh_freqdrink_sixmonths <dbl> 5, 7, 3, 2, 6, 5, 6, 4, 3, 6, 4, 4, ...
## $ scale_auh_freqbinge_sixmonths <dbl> 5, 5, 3, 1, 6, 5, 6, 1, 2, 3, 2, 4, ...
## $ scale_auh_quantdrink_sixmonths <dbl> 16, 6, 7, 4, 10, 8, 10, 2, 5, 3, 5, ...
## $ scale_auh_freqdrink_heaviest <dbl> 6, 7, 5, 4, 7, 6, 7, 5, 4, 7, 7, 5, ...
## $ scale_auh_freqbinge_heaviest <dbl> 6, 5, 5, 1, 7, 6, 7, 2, 1, 5, 4, 3, ...
## $ scale_auh_quantdrink_heaviest <dbl> 24, 6, 10, 4, 12, 10, 20, 4, 6, 4, 5...
## $ scale_dsm5_tot <dbl> 10, 6, 9, 7, 11, 6, 11, 7, 6, 9, 8, ...
## $ scale_yap_life <dbl> 19, 23, 21, 15, 25, 17, 27, 17, 6, 2...
## $ scale_yap_year <dbl> 18, 12, 18, 12, 25, 11, 20, 13, 6, 1...

```

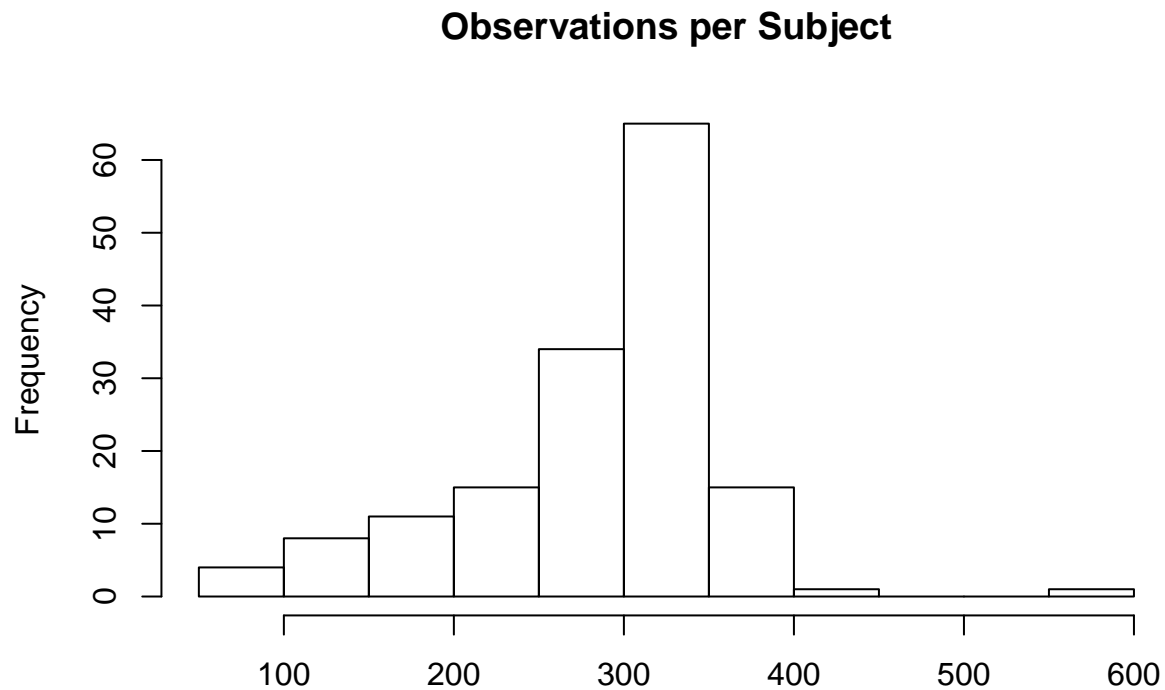
## \$ assist_1_all	<dbl> 6, 7, 7, 1, 8, 3, 8, 1, 1, 2, 6, 3, ...
## \$ assist_4_all	<dbl> 1.5, 0.0, 0.0, 0.0, 1.5, 0.0, 1.5, 0...
## \$ scale_assist_5_all	<dbl> 0.0, 0.0, 0.0, 0.0, 3.0, 0.0, 0.0, 0...
## \$ scale_assist_6_all	<dbl> 3.0, 0.0, 33.0, 0.0, 3.0, 0.0, 1.5, ...
## \$ scale_assist_7_all	<dbl> 4.5, 0.0, 183.0, 0.0, 19.5, 0.0, 3.0...
## \$ scale_assist_8_inject	<dbl> 2, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, ...
## \$ scale_scl90_tot	<dbl> 94, 98, 17, 115, 169, 38, 42, 67, 66...
## \$ scale_scl90_som	<dbl> 12, 13, 3, 12, 11, 10, 2, 13, 1, 12,...
## \$ scale_scl90_oc	<dbl> 12, 17, 2, 20, 33, 4, 7, 13, 5, 18, ...
## \$ scale_scl90_sens	<dbl> 9, 5, 4, 10, 10, 6, 6, 7, 8, 9, 9, 7...
## \$ scale_scl90_dep	<dbl> 19, 19, 3, 20, 36, 4, 17, 12, 14, 13...
## \$ scale_scl90_anx	<dbl> 11, 15, 3, 13, 25, 2, 1, 9, 4, 11, 2...
## \$ scale_scl90_ang	<dbl> 4, 5, 1, 8, 9, 2, 0, 1, 4, 8, 1, 2, ...
## \$ scale_scl90_pho	<dbl> 2, 3, 0, 0, 7, 0, 0, 1, 0, 1, 2, 4, ...
## \$ scale_scl90_par	<dbl> 6, 5, 1, 10, 8, 2, 0, 3, 16, 5, 7, 0...
## \$ scale_scl90_psy	<dbl> 8, 8, 0, 11, 16, 2, 4, 1, 8, 1, 0, 5...
## \$ scale_ius_tot	<dbl> 91, 92, 32, 82, 92, 62, 66, 87, 69, ...
## \$ scale_asi3_pc	<dbl> 11, 5, 0, 10, 1, 16, 1, 16, 0, 9, 3,...
## \$ scale_asi3_cc	<dbl> 10, 9, 0, 19, 16, 10, 1, 21, 0, 18, ...
## \$ scale_asi3_sc	<dbl> 10, 13, 0, 13, 12, 15, 6, 21, 5, 8, ...
## \$ scale_asi3_tot	<dbl> 31, 27, 0, 42, 29, 41, 8, 58, 5, 35,...
## \$ scale_dts_tolera	<dbl> 3.666667, 3.666667, 5.000000, 3.0000...
## \$ scale_dts_absorb	<dbl> 3.000000, 3.666667, 4.333333, 3.3333...
## \$ scale_dts_appraise	<dbl> 2.833333, 4.000000, 5.000000, 3.1666...
## \$ scale_dts_regulate	<dbl> 3.000000, 4.000000, 3.333333, 2.0000...
## \$ scale_dts_tot	<dbl> 3.125000, 3.833333, 4.416667, 2.8750...
## \$ scale_fad_prob	<dbl> 14, 13, 19, 19, 10, 18, 16, 16, 12, ...
## \$ scale_fad_comm	<dbl> 24, 23, 29, 22, 16, 25, 18, 26, 23, ...
## \$ scale_fad_role	<dbl> 31, 22, 38, 27, 22, 31, 27, 24, 34, ...
## \$ scale_fad_resp	<dbl> 16, 14, 24, 17, 10, 20, 12, 19, 17, ...
## \$ scale_fad_inv	<dbl> 16, 16, 28, 20, 17, 22, 21, 14, 16, ...
## \$ scale_fad_beh	<dbl> 26, 21, 33, 28, 18, 26, 26, 27, 19, ...
## \$ scale_fad_gen	<dbl> 30, 27, 48, 40, 20, 41, 32, 38, 33, ...
## \$ scale_mps_wb	<dbl> 6, 1, 11, 10, 0, 12, 1, 10, 12, 12, ...
## \$ scale_mps_sp	<dbl> 4, 7, 4, 10, 11, 9, 0, 1, 9, 11, 1, ...
## \$ scale_mps_ac	<dbl> 9, 8, 6, 11, 8, 9, 3, 5, 11, 5, 8, 6...
## \$ scale_mps_sc	<dbl> 6, 3, 11, 9, 6, 11, 4, 4, 7, 12, 7, ...
## \$ scale_mps_sr	<dbl> 12, 8, 0, 6, 11, 6, 3, 11, 8, 6, 6, ...
## \$ scale_mps_al	<dbl> 0, 4, 2, 6, 3, 0, 0, 7, 12, 2, 10, 5...
## \$ scale_mps_ag	<dbl> 1, 6, 2, 4, 5, 1, 2, 2, 9, 1, 1, 5, ...
## \$ scale_mps_ct	<dbl> 4, 12, 9, 7, 3, 5, 7, 8, 8, 8, 5, 6,...
## \$ scale_mps_ha	<dbl> 9, 12, 9, 5, 0, 8, 7, 9, 10, 9, 9, 8...
## \$ scale_mps_td	<dbl> 6, 9, 3, 7, 6, 1, 3, 2, 6, 0, 5, 5, ...
## \$ scale_mps_ab	<dbl> 11, 5, 6, 9, 3, 7, 8, 11, 8, 10, 8, ...
## \$ scale_mps_uv	<dbl> 2, 2, 8, 3, 3, 4, 2, 2, 5, 3, 5, 6, ...
## \$ scale_mps_pag	<dbl> 58, 53, 56, 79, 56, 73, 28, 48, 80, ...
## \$ scale_mps_pco	<dbl> 51, 38, 76, 73, 50, 83, 32, 47, 70, ...
## \$ scale_mps_nag	<dbl> 51, 68, 34, 51, 66, 40, 40, 48, 76, ...
## \$ scale_mps_nal	<dbl> 37, 49, 31, 59, 49, 29, 23, 72, 90, ...
## \$ scale_mps_pem	<dbl> 61, 51, 75, 89, 60, 89, 30, 55, 90, ...
## \$ scale_mps_nem	<dbl> 37, 55, 25, 54, 54, 28, 20, 58, 89, ...
## \$ scale_mps_con	<dbl> 70, 106, 75, 68, 44, 58, 66, 69, 82,...

```
#previously also loaded in Xday (X) and yday (y)
```

ema survey data from qualtrics (ema feature source)

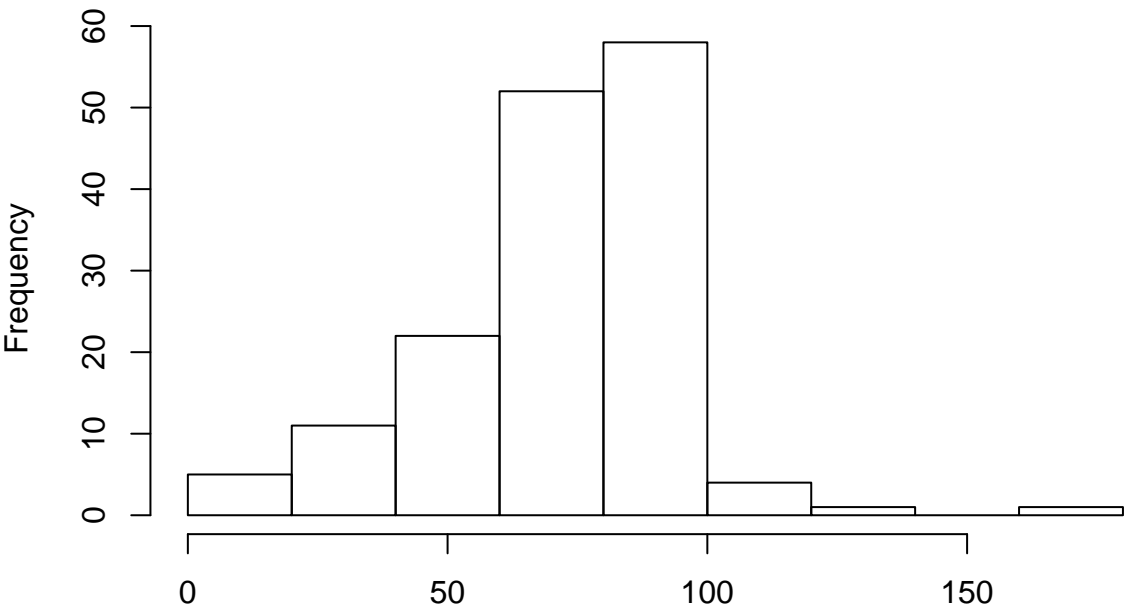
```
##Basic descriptives and properties
```

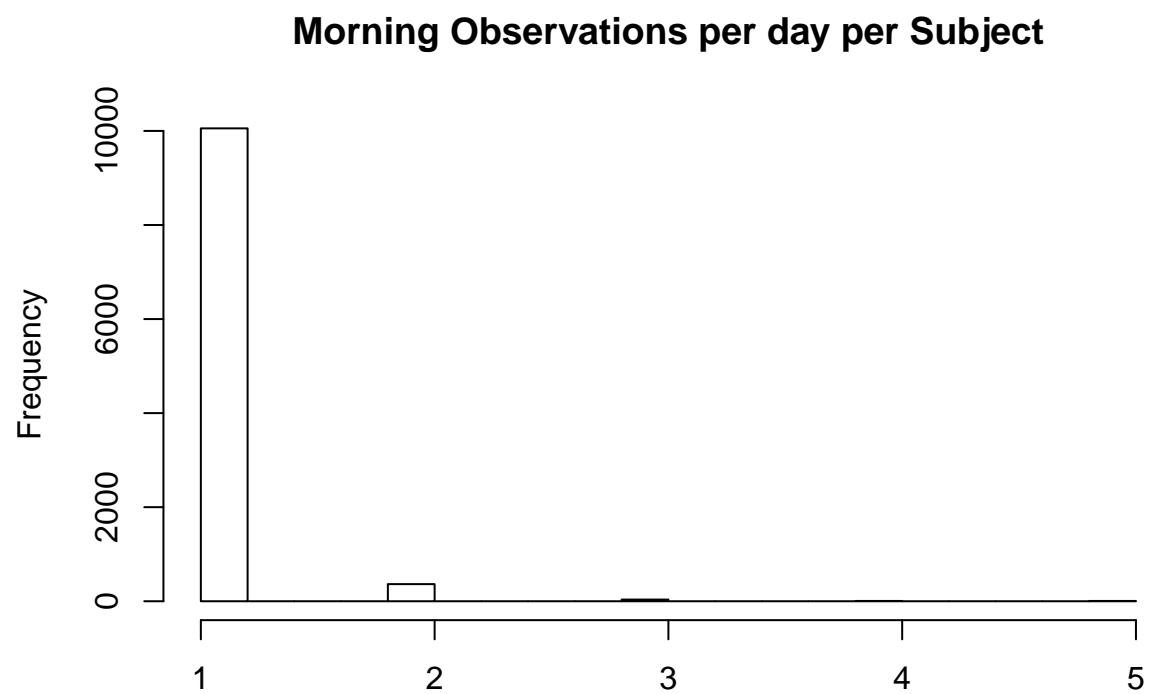
There are 43803 rows from 154 subjects, who contributed an average of 284.44 observations (range 51 - 559).



154 subjects contributed an average of 71.07 total morning observations (range 1 - 163) and an average of 1.05 morning surveys per day (range 1 - 5).

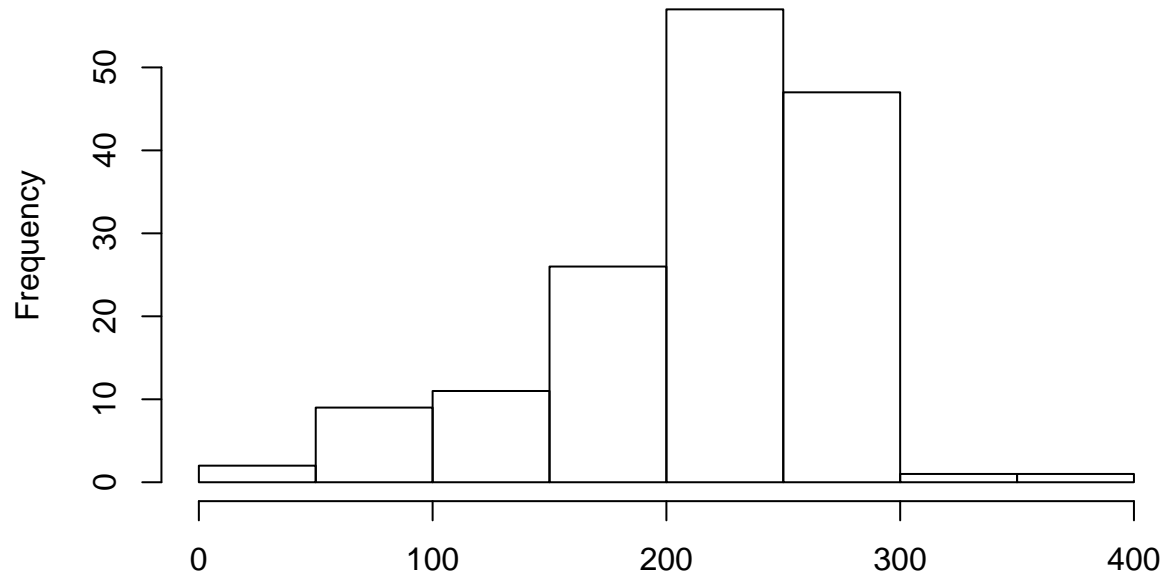
Morning Observations per Subject



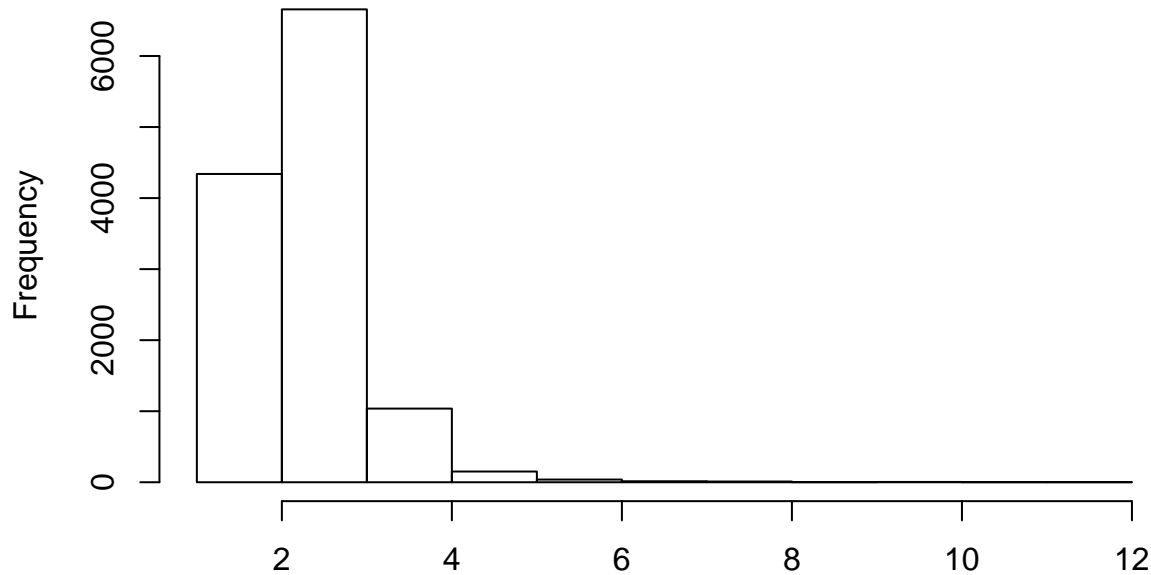


154 subjects contributed an average of 213.36 total day observations (range 39 - 396) and an average of 2.68 day surveys per day (range 1 - 12).

day Observations per Subject



day Observations per day per Subject



Understanding sources of duplicate surveys per day

Looking at the data and speaking to project staff, we determined that the following reasons **do not** explain many surveys per day:

1. Duplicate surveys (number of duplicates is 0)
2. People starting but not finishing (no, removed in clearing; number of incompletes is 0)
3. utc indicates an incorrect date? no, as on 4/24/2019, utc is the Quliatrics start time, which is different for 13517 people. Looking just at the dates (not the time), only 0 are different for utc and start date.

Looking at the data and speaking to project staff, we determined that the following reasons **do** explain many surveys per day:

1. Several people early on the in study who are documented to have completed surveys under a different survey distribution system
2. A few individual instances of people who had multiple responses for other reasons (e.g., a participant who was completing surveys 'for' someone else, who got data reassigned to them), as described in the data log
3. Partial finishes that were recorded as complete if they answered the lapse Qs (clear in the patterns of missingness). Currently, the number of obs this describes is 0.
4. People taking multiple surveys during the 6 hour window when the link was active.

Looking closely at people with many *morning* surveys per day Subject 79, 269, 269, 269, 269, 269 had 5 morning surveys one day, giving many similar responses in a short span.

subid	day	time	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
79	2018-08-16	12:15:38	1	4	7	7	2	8	3	8	8	

subid	day	time	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
79	2018-08-16	12:17:50	1	3	7	7	2	8	5	7	7	
79	2018-08-16	12:46:07	1	6	7	8	3	8	4	7	8	
79	2018-08-16	12:55:02	1	3	7	7	2	7	4	7	8	
79	2018-08-16	13:00:23	1	3	5	5	2	9	4	7	7	

subid	day	time	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
30	2017-12-24	10:26:58	1	0	0	1	11	10	7	11	11	
30	2017-12-24	10:27:37	1	0	4	3	12	11	10	11	11	
30	2017-12-24	10:28:26	1	1	0	0	8	11	4	11	11	
30	2017-12-24	10:29:46	1	0	0	4	12	11	10	11	11	

12 people had three morning surveys in one day, and some of these people had three morning surveys multiple days (subjects).

We looked at these cases and found nothing clearly wrong. Here is a representative example of one day from one subject who often completed many surveys per day:

subid	day	time	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
185	2019-03-04	08:39:14	1	3	2	4	5	8	6	7	10	
185	2019-03-04	08:39:57	1	4	2	5	3	6	6	4	10	
185	2019-03-04	13:24:34	1	3	3	8	7	8	6	4	8	

Looking closely at people with many *day* surveys per day 154 subjects had more than 3 surveys per day, with some having as many as 10! (Subjects 66, 84, 84, 269). Responses seem a little odd (going from 2 to 10 and back to 2 for ema_7 within a 10 minute span).

We looked at these cases and found nothing clearly wrong. Here is a representative example of one day from someone who often completed many surveys per day:

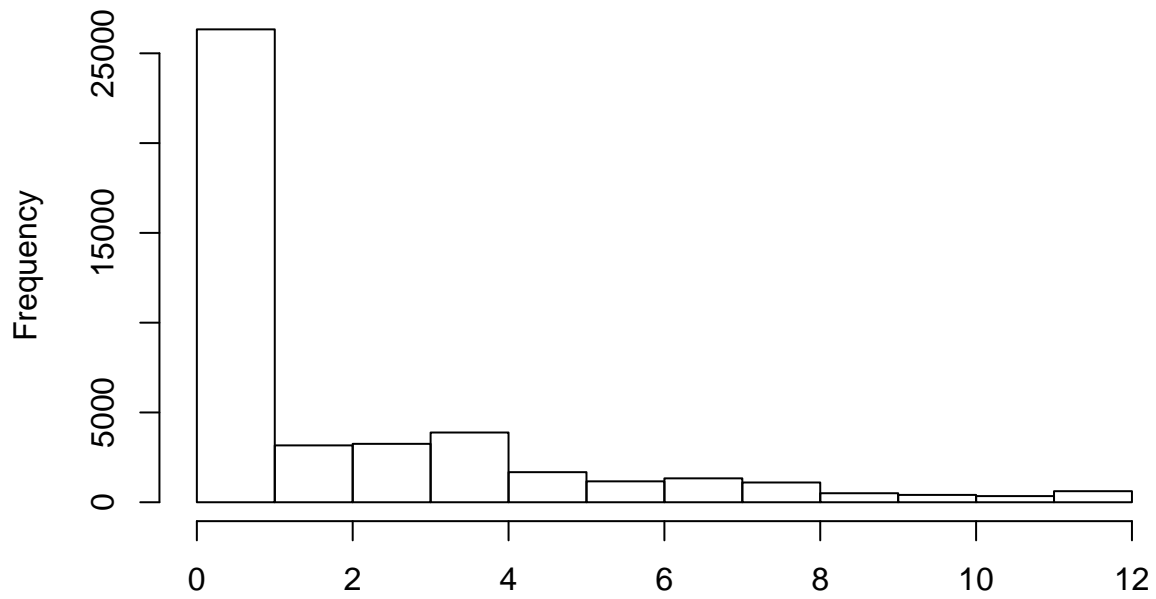
subid	day	time	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7
53	2018-03-30	00:00:38	1	11	6	12	0	1	11
53	2018-03-30	00:13:58	1	1	1	0	0	1	5
53	2018-03-30	12:55:35	1	0	0	0	0	11	1
53	2018-03-30	18:20:42	1	0	0	7	4	9	3
53	2018-03-30	19:11:01	1	0	0	0	0	8	4
53	2018-03-30	22:07:34	1	0	0	0	0	8	8

Characterizing the data

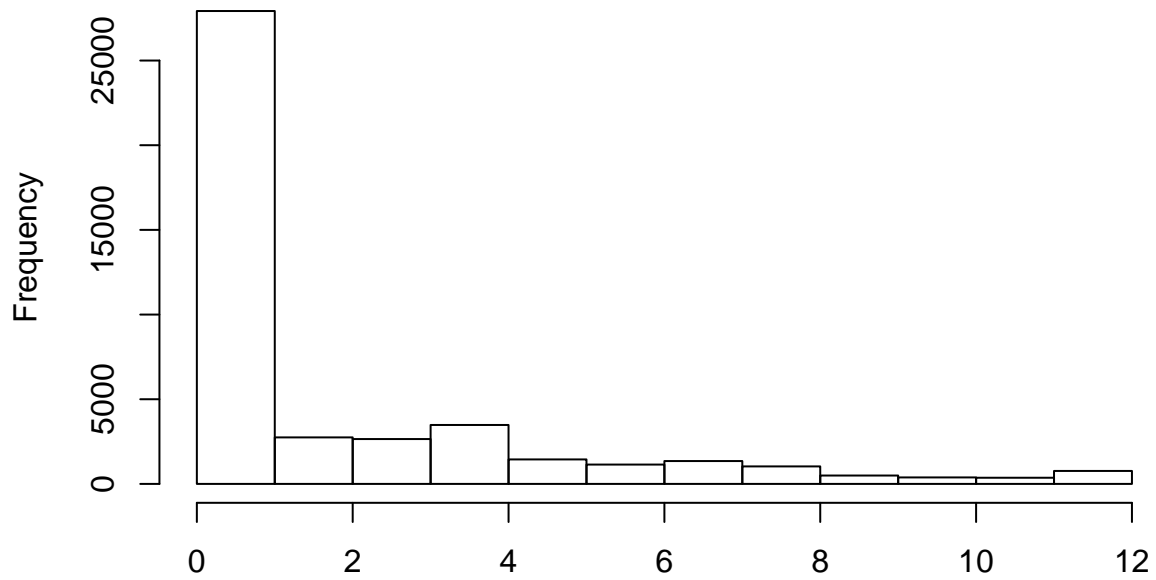
	n	mean	sd	median	min	max	skew	kurtosis
ema_1	43803	1.03	0.17	1	1	2	5.44	27.65
ema_1_5	1340	2.50	0.56	3	1	3	-0.55	-0.73
ema_2	43777	2.03	2.86	0	0	12	1.55	1.84
ema_3	43777	1.93	2.92	0	0	12	1.66	2.13
ema_4	43777	2.99	3.29	2	0	12	0.98	0.13
ema_5	43777	4.17	3.59	4	0	12	0.48	-0.78

	n	mean	sd	median	min	max	skew	kurtosis
ema_6	43777	7.18	2.45	7	1	11	-0.48	-0.13
ema_7	43777	5.75	2.70	6	1	11	0.06	-0.80
ema_8	10942	6.35	2.95	7	1	11	-0.20	-0.87
ema_9	10942	7.40	2.83	8	1	11	-0.58	-0.40
ema_10	10942	3.24	2.34	3	1	11	1.10	0.95

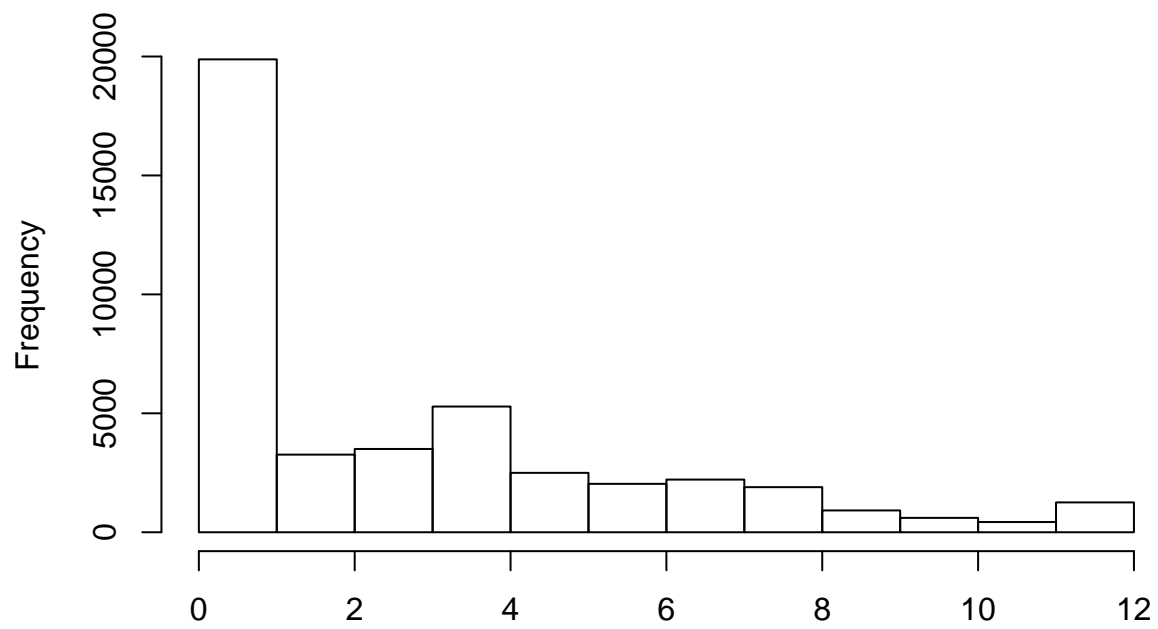
Greatest Urge Histogram



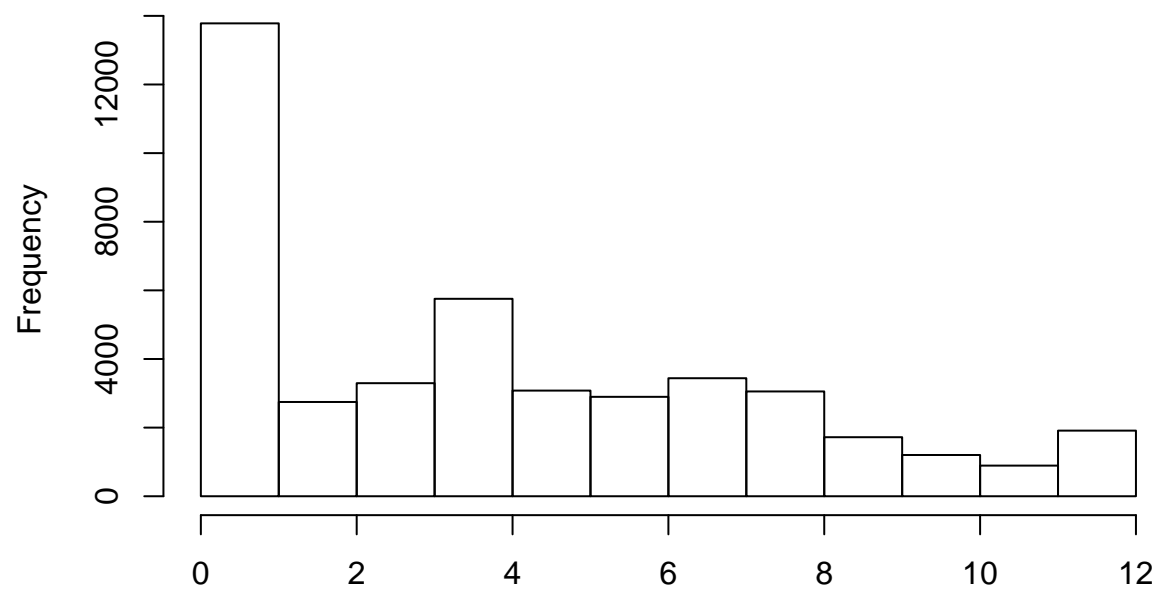
Risks Histogram



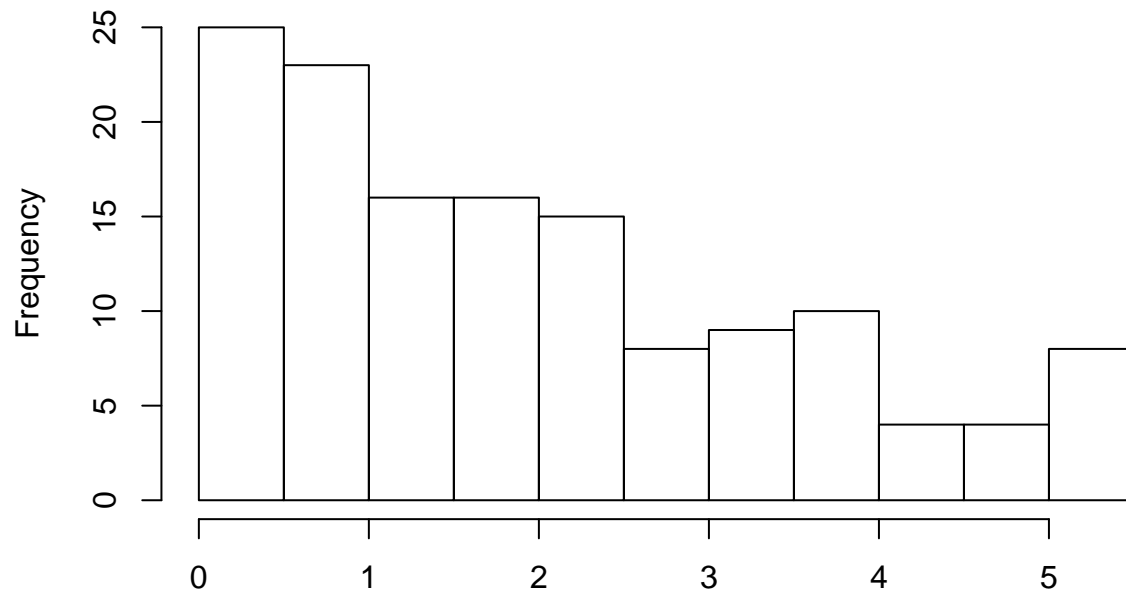
Hassles Histogram



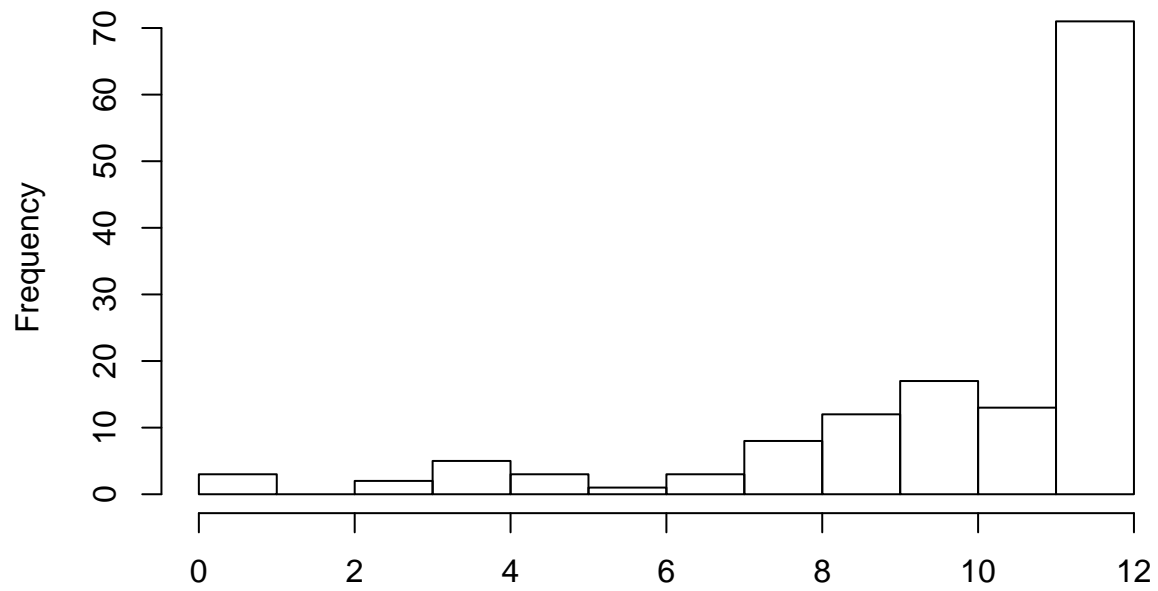
Positive Events



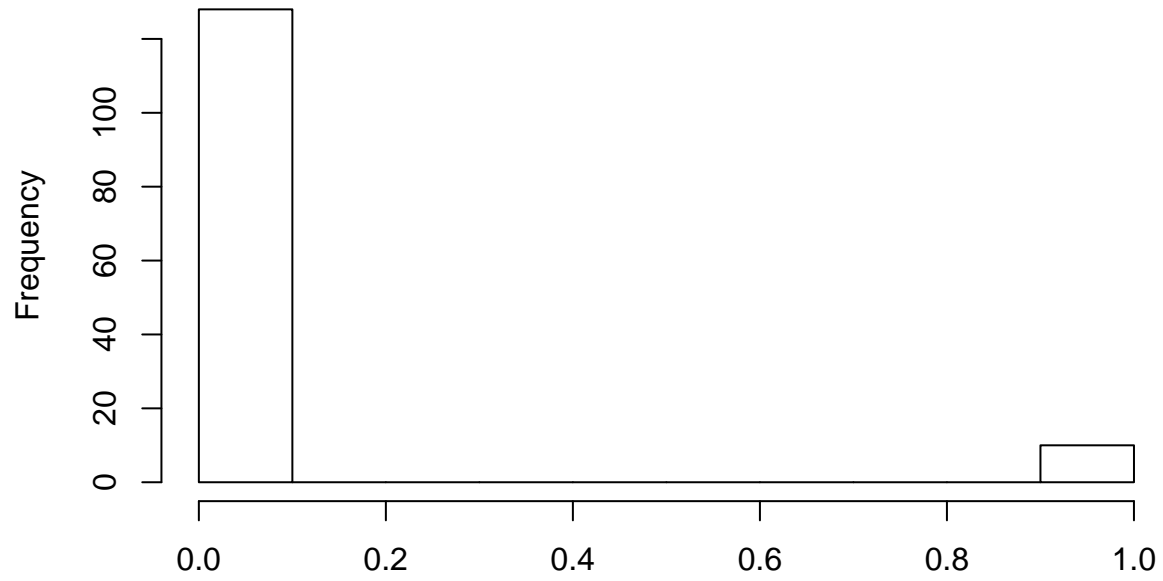
Urge Within-Person Mean



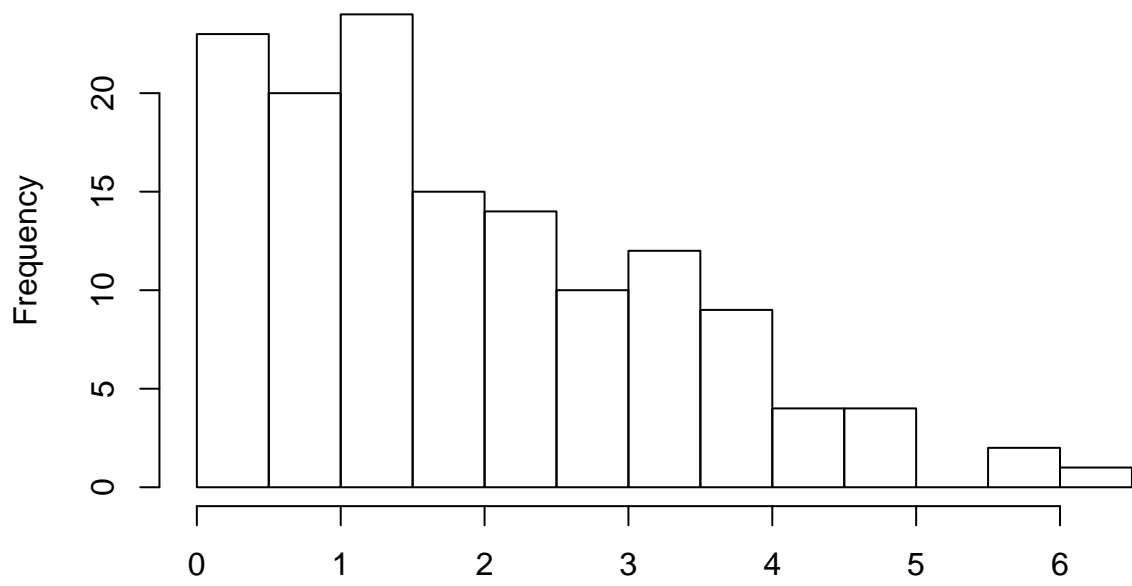
Urge Within-Person Max



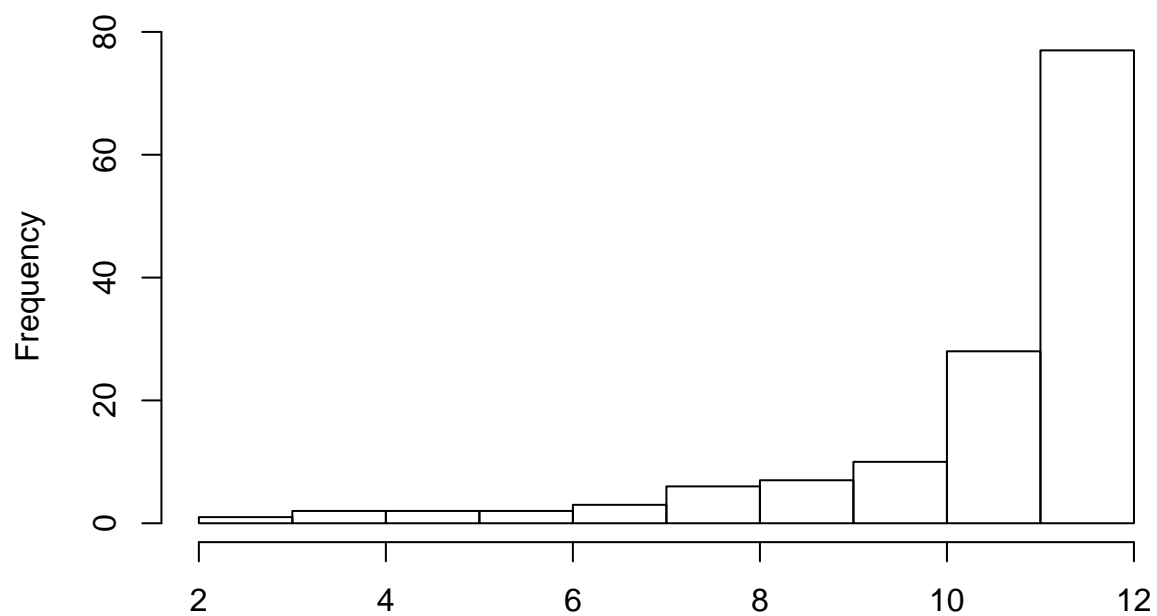
Urge Within–Person Min



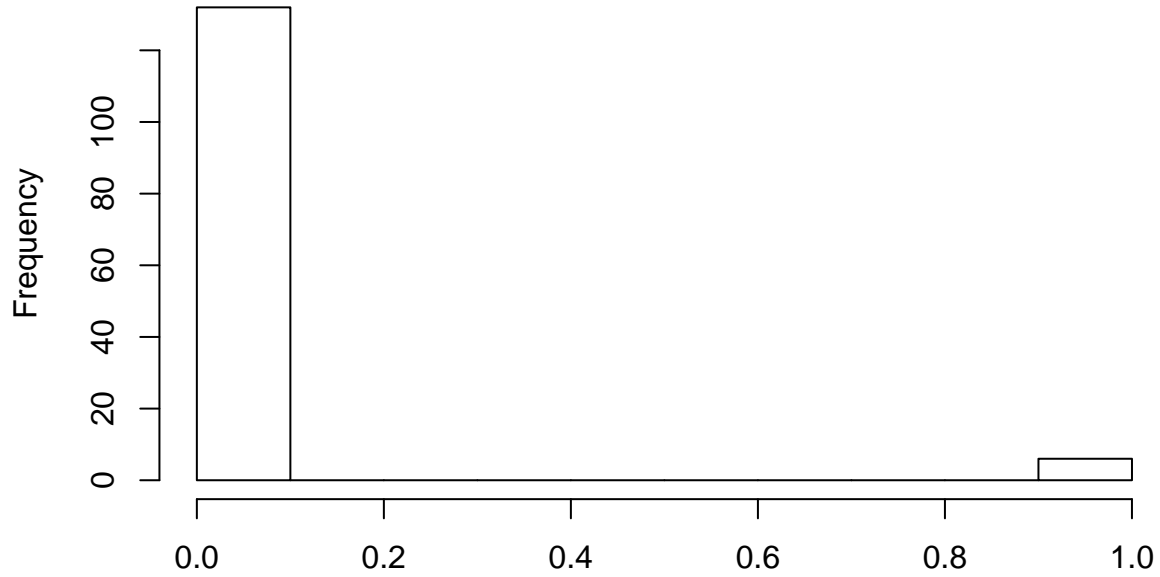
Risks Within-Person Mean



Risks Within-Person Mean



Risks Within–Person Min



###Missing data

Table shows the number of observations with a particular pattern and the pattern (i.e., the presence/absence of each item). The bottom row shows the number of observations missing each item.

n	ema_1	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
10942	1	1	1	1	1	1	1	1	1	1
32835	1	1	1	1	1	1	1	0	0	0
26	1	0	0	0	0	0	0	0	0	0
	0	26	26	26	26	26	26	32861	32861	32861

Checking for errors with survey completion

There is one apparent error with the survey display:

- The number of people who did not report a lapse but have responses for questions about the lapse is 0.

subid	day	ema_1	ema_1_1	ema_1_3	ema_1_5	ema_2	ema_3	ema_4	ema_5	ema_6	ema_7	ema_8	ema_9	ema_10
-------	-----	-------	---------	---------	---------	-------	-------	-------	-------	-------	-------	-------	-------	--------

Other errors checked for:

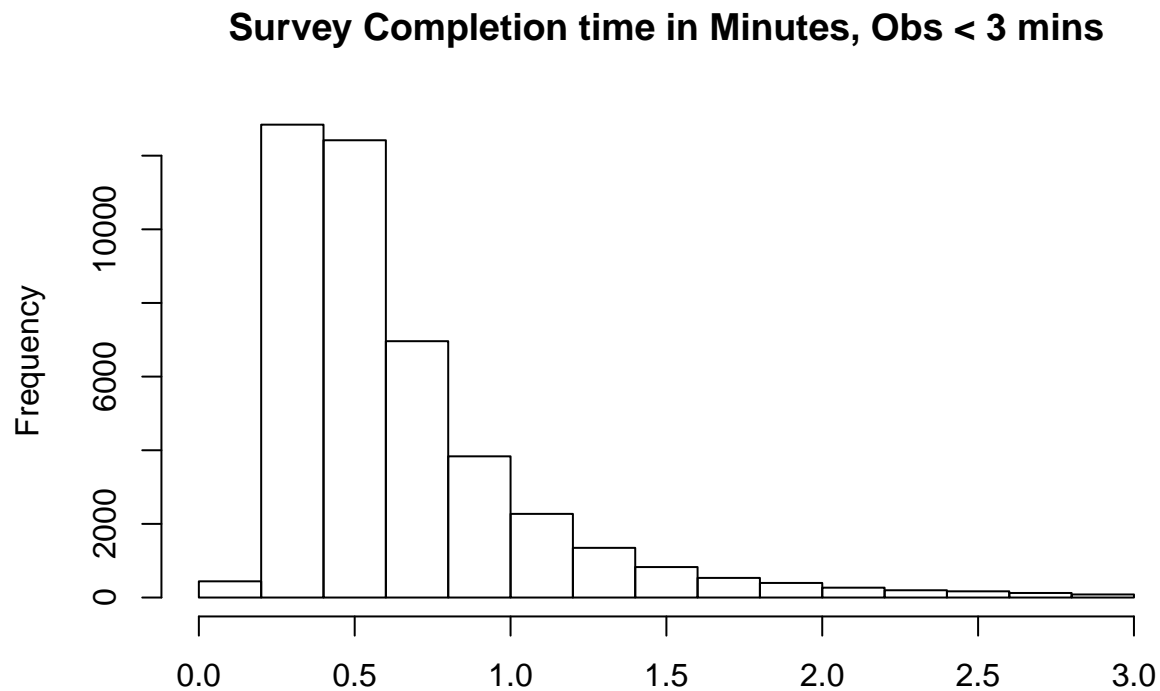
- The number of people who reported a lapse but have no responses for the lapse questions is 0.

- The number of morning surveys that don't have responses to questions 8, 9, and 10 is 3.
 - Of these, 3 were lapses, and were probably filled in based on in-lab information.
- The number of evening surveys that have responses to questions 8, 9, and 10 is 0.

Checking survey completion times

Of 4.3803×10^4 observations, the average time it took to complete the survey was 1.43 minutes (range 0 - 4199). Survey duration is extremely kurtotic 2.018659×10^4 .

Most surveys (42719) were completed in under 3 minutes. Among surveys that took less than three minutes, distribution is more normal, though right skewed.



Some surveys were completed extremely slowly:

- 110 surveys took more than an hour
- 25 surveys took more than three hours
- 16 surveys took more than five hours

Many of the surveys that look a long time were lapses:

subid	day	survey_duration_hours	type	ema_1	ema_1_5	ema_2	ema_3	ema_4	ema_5	ema_6
66	2018-08-13	69.984444	2	1	NA	1	0	1	2	10
234	2019-08-28	24.238056	2	2	3	NA	NA	NA	NA	NA

subid	day	survey_duration_hours	type	ema_1	ema_1_5	ema_2	ema_3	ema_4	ema_5	ema_6
53	2018-04-11	19.962222	1	1	NA	5	10	4	3	3
269	2019-10-21	11.853889	2	1	NA	9	6	9	6	2
188	2019-04-06	11.286944	2	1	NA	0	0	0	0	6
27	2018-02-07	11.052778	2	1	NA	0	0	1	0	6
150	2018-10-31	9.705833	2	2	2	4	2	2	2	7
98	2018-08-17	8.797222	2	1	NA	0	0	1	0	6
138	2018-12-16	8.790000	2	1	NA	0	0	0	0	8
189	2019-04-21	8.011111	2	1	NA	0	3	3	5	6
137	2018-10-24	7.869722	2	1	NA	3	5	7	6	8
39	2018-03-21	7.768056	2	1	NA	4	4	4	4	5
156	2018-11-07	6.722222	1	1	NA	0	0	0	8	11
137	2018-11-04	6.263889	2	1	NA	9	7	6	7	8
80	2018-07-23	5.504722	2	1	NA	4	4	4	6	9
80	2018-08-04	5.022500	2	1	NA	3	1	0	5	10

Some people were especially slow:

- 128 people took more than 3 minutes more than once.
- 69 people took more than 3 minutes more than five times.
- 33 people took more than 3 minutes more than ten times

A few people regularly took more than 10 minutes.

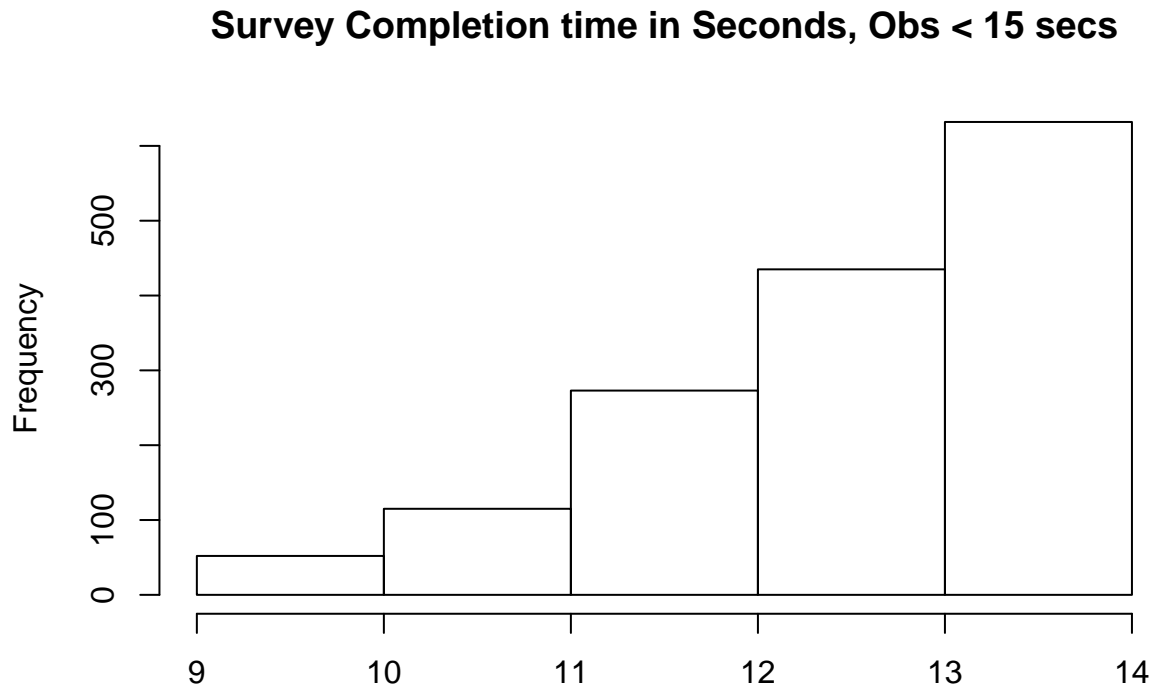
subid	n_morethan10minutes
10	7
18	6
30	10
33	7
37	15
39	11
58	16
77	8
80	7
90	7
92	7
119	6
130	6
150	17
156	7
185	8
208	9
225	12
236	6
255	7
269	6

Other surveys were completed very quickly.

- 1507 surveys took more than 15 seconds

- 440 surveys took more than 13 seconds
- 52 surveys took more than 11 seconds

0 of the surveys that were completed in under 15 seconds were lapses.



Some people were especially fast:

- 33 people took less than 13 minutes more than once.
- 23 people took less than 13 minutes more than five times.
- 15 people took less than 13 minutes more than ten times

A few people regularly took 10 seconds or less.

subid	n_lessthan10secs
86	4
92	10
187	3
240	3
243	3
259	17

Looking at lapses (y)

There are 1343 lapses in the ema dataset and 972 lapses in the lapse dataset.

In the ema dataset, most people have just one lapse per day, with an average of 1.32 (range 1 - 7).

```
#in y lapses
lapses$day <- lapses$utc %>% #converting into human readable form
  as.numeric %>%
  as.POSIXct(tz='America/Chicago', origin="1970-01-01")
#note, the time has been removed

##SARAH where did this come from?
y_TooManylapses_per_day <- lapses %>% group_by(subid, day) %>%
  filter(lapse == 1) %>%
  summarize(n = n()) %>% filter(n > 1) %>% nrow()

lapsesPerPerson <- lapses %>% group_by(subid) %>%
  filter(lapse == 1) %>%
  summarize(n = n()) %>%
  summarize(mean_nlapses = mean(n),
            max_nlapses = max(n),
            min_nlapses = min(n))
```

In the y dataset, there are `r` lapses. 0 had more than one lapse per day. Among lapses, some came from the same people. Among those who lapsed, the average number of lapses was 11.0454545 (range 1 = 56).

Looking at ema Features (X, looking at id and ema variables)

##SARAH we no longer have a features file?

```
#Do the X dataset and y dataset have the same number of observations? `r nrow(X) #== nrow(lapses)`
```

Looking at the id dataset

```
# ##SARAH doesnt work
# #reloading just in case?
# id <- read_rds(file.path(data_path, "ds_id.rds")) %>%
#   glimpse()
# dim(id)
# #154 rows
#
# id %>% group_by(subid) %>%
#   summarize(n = n()) %>% nrow()
# #154 people
#
# #vs for ema
# ema %>% group_by(subid) %>%
#   summarize(n = n()) %>% nrow()
# #also 154
#
# #looking at demographics
# id %>% select(contains("dem")) %>% varDescribe()
# #some missing values on Dem2_4, 6, 8
```



```

# #also where are Dem 2_1, 3, 5, 7?
# #dem_7 must be income
# ##SARAH error might be here?
# #hist(id$dem_7)
#
# #looking at alcohol use history
# id %>% select(contains("auh")) %>% varDescribe()
# #no missing
#
# #looking at assist
# id %>% select(contains("assist")) %>% varDescribe()
# #no missing
# #some insane kurtosis and skew for the self-efficacy
#
# #DSM
# id %>% .$scale_dtm5_tot %>% hist()
# #left skew but not too bad
#
# #DTS
# id %>% select(contains("dts")) %>% varDescribe()
# #looks good
#
# #FAD
# id %>% select(contains("fad")) %>% varDescribe()
# #why are the maxes here all over the place? what was the scale?
# #otherwise no problems
#
# #ASI
# id %>% select(contains("asi")) %>% varDescribe()
# #looks good
#
# #SCL
# id %>% select(contains("scl")) %>% varDescribe()
# #mostly normal excel't Pho and Ang are kurtotic
# #most people scored very low on both
#
# #MPS
# id %>% select(contains("mps")) %>% varDescribe()
# #looks normal
#
# #else
# id %>% select(-contains("mps"), -contains("scl"), -contains("asi"),
#             -contains("fad"), -contains("dts"), -contains("assist"),
#             -contains("auh"), -contains("dsm"), -contains("dem"),
#             -contains("sub"), -contains("utc")) %>% varDescribe()
# #all good

```

- age is ok
- gender is ok
- trait level time 0 is ok as just intercept
- trait level time 0 is a source of interaction, too
- id is the id labels, includes things like the DSM-5 checklist, demographics
- SR is self-report varying

Clinical story is to build a model to predict from self-report Theory ema story is to expand on static person-level variables - by adding time-varying components - and then interactions

next ... we will do a nested CV just using ema to get a starting point. Maybe use lasso to figure out what features are best and most useful. To help us with the theory-driven questions. would like to interact features – maybe not all features, but some subset (e.g., holiday, person-level variables, ...)

#thinking about pre-registering this project - there is 1 way that we can still be cherry-picking: - specifically, any decisions made outside of CV - is still subject to cherry picking - specifically the DV and inclusion/exclusion - and inclusion/exclusion of the ema data (e.g., because of odd behavior) - including for sparseness / missing data within the ema

goals of this would be:

1. to do analyses we are comfortable with
2. to do analyses that others are comfortable with / confident in?

#To - do: - check for missingness in the ema ... - do a little lit search using risk 2 citations as starting point