Linear Models

Linear Model - 2.1.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   24.79734 34.83525 -5.398668
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:  0.09930528 0.1966562
##
## Fixed effects: PP ~ Day + NASA_summative
##                   Value  Std.Error DF   t-value p-value
## (Intercept)    -5.551375 0.12173640 23 -45.60160  0.0000
## DayDay1        -0.078817 0.09728321 23  -0.81018  0.4261
## DayDay2        -0.039088 0.10258121 23  -0.38104  0.7067
## DayDay3        -0.065226 0.09306486 23  -0.70086  0.4904
## NASA_summative -0.001515 0.00193754 23  -0.78195  0.4422
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.121
## DayDay2        -0.003  0.560
## DayDay3        -0.449  0.448  0.412
## NASA_summative -0.798 -0.303 -0.428  0.088
##
## Standardized Within-Group Residuals:
##          Min          Q1         Med          Q3         Max
## -2.271735398 -0.455837379  0.009884031  0.631198734  1.626738854
##
## Number of Observations: 36
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    23 14898.043  <.0001
## Day                3    23     0.429  0.7343
## NASA_summative     1    23     0.611  0.4422
```

Linear Model - 2.2.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##   Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   4.912654 14.48372 4.543673
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:  0.08629463 0.1343128
##
## Fixed effects: E4_HR ~ Day + NASA_summative
##                    Value  Std.Error DF  t-value p-value
## (Intercept)     3.723776 0.09057855 21 41.11102  0.0000
## DayDay1         0.098298 0.06711659 21  1.46458  0.1578
## DayDay2        -0.096079 0.07302825 21 -1.31565  0.2025
## DayDay3         0.010602 0.06666784 21  0.15903  0.8752
## NASA_summative -0.001945 0.00146271 21 -1.32957  0.1979
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.061
## DayDay2         0.052  0.555
## DayDay3        -0.475  0.389  0.333
## NASA_summative -0.809 -0.332 -0.439  0.177
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -1.67716747 -0.45523240  0.09958021  0.44219809  1.83898538
##
## Number of Observations: 34
## Number of Groups: 9


##                numDF denDF  F-value p-value
## (Intercept)        1    21 9610.767  <.0001
## Day                3    21    3.629  0.0297
## NASA_summative     1    21    1.768  0.1979
```

Linear Model - 2.3.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##   Data: physiological_questionnaire_df
##         AIC      BIC     logLik
##    80.95935 90.53042 -33.47967
##
## Random effects:
##  Formula: ~1 | Participant_ID
##          (Intercept)  Residual
## StdDev: 0.0001310236 0.5618565
##
## Fixed effects: E4_EDA ~ Day + NASA_summative
##                    Value   Std.Error DF    t-value p-value
## (Intercept)     0.7889630 0.30297902 21  2.6040185  0.0166
## DayDay1        -0.2690625 0.27456446 21 -0.9799612  0.3383
## DayDay2         0.1320049 0.29344985 21  0.4498382  0.6574
## DayDay3        -0.0102732 0.27468196 21 -0.0374005  0.9705
## NASA_summative -0.0035575 0.00475265 21 -0.7485277  0.4624
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.215
## DayDay2        -0.106  0.532
## DayDay3        -0.508  0.436  0.395
## NASA_summative -0.786 -0.263 -0.367  0.110
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -4.89953170 -0.02125745  0.10577937  0.25041050  0.91275995
##
## Number of Observations: 34
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    21 31.424075  <.0001
## Day                3    21  0.837811  0.4883
## NASA_summative     1    21  0.560294  0.4624
```

Linear Model - 2.4.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   24.75602 33.5627 -5.378012
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:   0.1511667 0.1797519
##
## Fixed effects: iWatch_HR ~ Day + NASA_summative
##                    Value  Std.Error DF   t-value p-value
## (Intercept)     3.679228 0.14643734 19 25.124927  0.0000
## DayDay1         0.110089 0.09941065 19  1.107421  0.2819
## DayDay2        -0.089181 0.10671634 19 -0.835678  0.4137
## DayDay3         0.061066 0.09426161 19  0.647835  0.5248
## NASA_summative -0.003402 0.00216935 19 -1.568032  0.1334
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.058
## DayDay2         0.080  0.607
## DayDay3        -0.429  0.471  0.421
## NASA_summative -0.803 -0.333 -0.478  0.106
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -2.29045882 -0.43380660  0.05330517  0.40690214  1.48283013
##
## Number of Observations: 31
## Number of Groups: 8


##                numDF denDF   F-value p-value
## (Intercept)        1    19 3111.5070  <.0001
## Day                3    19    3.1021  0.0512
## NASA_summative     1    19    2.4587  0.1334
```