ANCOVA Analyses for MHF 2019 and 2020 Data

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Let's start by creating our data of interest for %No shows (attendance).

```
##Use to bypass having to use double colon operator each time.
read_data <- RMHF::read_data
df2019 <- read_data()[1:11,]
df2020 <- read_data()[12:22,]
covariate <- as.numeric(df2019$"% of patients who were no-shows")
var2020 <- as.numeric(df2020$"% of patients who were no-shows")
group <- c(rep(0,6), rep(1,5))
df <- data.frame("pretest" = covariate, "posttest" = var2020, "group" = group, stringsAsFactors = FALSE)
```

Now we can regress 2020 data on the categorical presence of the intervention, with 2019 data as the covariate.

```
library(rstatix)
#>
#> Attaching package: 'rstatix'
#> The following object is masked from 'package:stats':
#>
#>     filter
anova_test(data = df, formula = posttest ~ pretest + group)
#> Coefficient covariances computed by hccm()
#> ANOVA Table (type II tests)
#>
#>    Effect DFn DFd     F     p p<.05   ges
#> 1 pretest   1   8 0.555 0.477       0.065
#> 2   group   1   8 3.374 0.104       0.297
```

Now for Met-minutes.

```
var2019 <- as.numeric(df2019$"Met-minutes")
var2020 <- as.numeric(df2020$"Met-minutes")
group <- c(rep(0,6), rep(1,5))
df <- data.frame("pretest" = covariate, "posttest" = var2020, "group" = group, stringsAsFactors = FALSE)
```

Now we can regress 2020 data on the categorical presence of the intervention, with 2019 data as the covariate.

```
anova_test(data = df, formula = posttest ~ pretest + group)
#> Coefficient covariances computed by hccm()
#> ANOVA Table (type II tests)
#>
#>    Effect DFn DFd     F     p p<.05   ges
#> 1 pretest   1   8 0.788 0.401       0.090
#> 2   group   1   8 0.720 0.421       0.083
```

Now for % Females

```
var2019 <- as.numeric(df2019$"% Females")
var2020 <- as.numeric(df2020$"% Females")
group <- c(rep(0,6), rep(1,5))
df <- data.frame("pretest" = covariate, "posttest" = var2020, "group" = group, stringsAsFactors = FALSE)
```

Now we can regress 2020 data on the categorical presence of the intervention, with 2019 data as the covariate.

```
anova_test(data = df, formula = posttest ~ pretest + group)
#> Coefficient covariances computed by hccm()
#> ANOVA Table (type II tests)
#>
#>    Effect DFn DFd     F     p p<.05   ges
#> 1 pretest   1   8 2.632 0.143       0.248
#> 2   group   1   8 2.946 0.124       0.269
```

Now for Age

```
var2019 <- as.numeric(df2019$"Age")
var2020 <- as.numeric(df2020$"Age")
group <- c(rep(0,6), rep(1,5))
df <- data.frame("pretest" = covariate, "posttest" = var2020, "group" = group, stringsAsFactors = FALSE)
```

Now we can regress 2020 data on the categorical presence of the intervention, with 2019 data as the covariate.

```
anova_test(data = df, formula = posttest ~ pretest + group)
#> Coefficient covariances computed by hccm()
#> ANOVA Table (type II tests)
#>
#>    Effect DFn DFd     F     p p<.05   ges
#> 1 pretest   1   8 0.605 0.459       0.070
#> 2   group   1   8 0.381 0.554       0.045
```

Now for Prescheduled appointments (volume of visits)

```
var2019 <- as.numeric(df2019$"Prescheduled appointments")
var2020 <- as.numeric(df2020$"Prescheduled appointments")
group <- c(rep(0,6), rep(1,5))
df <- data.frame("pretest" = covariate, "posttest" = var2020, "group" = group, stringsAsFactors = FALSE)
```

Now we can regress 2020 data on the categorical presence of the intervention, with 2019 data as the covariate.

```
anova_test(data = df, formula = posttest ~ pretest + group)
#> Coefficient covariances computed by hccm()
#> ANOVA Table (type II tests)
#>
#>    Effect DFn DFd     F     p p<.05   ges
#> 1 pretest   1   8 0.381 0.554       0.045
#> 2   group   1   8 0.105 0.755       0.013
```

In conclusion, after adjusting for 2019 data, the intervention had no significant effect on 2020 data for any of the variables studied after adjusting for 2019 data.