

JD Survey Study

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```
##
## Attaching package: 'dplyr'

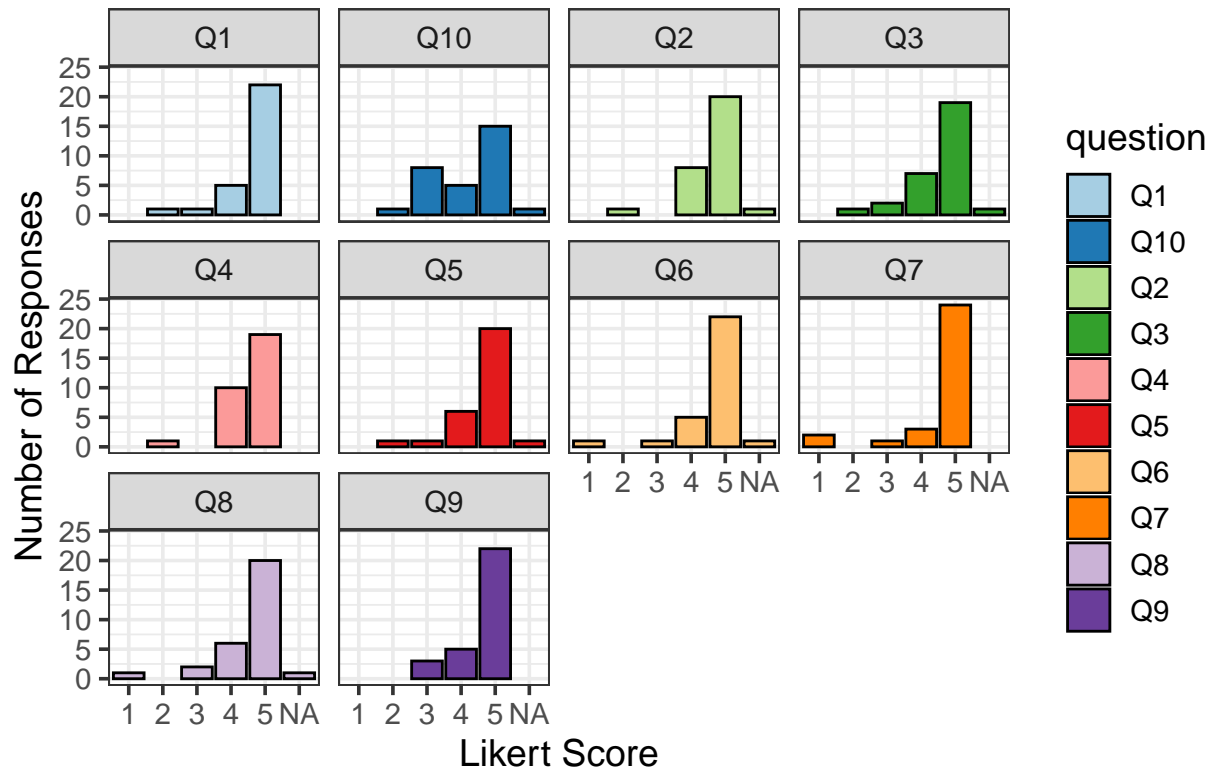
## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union

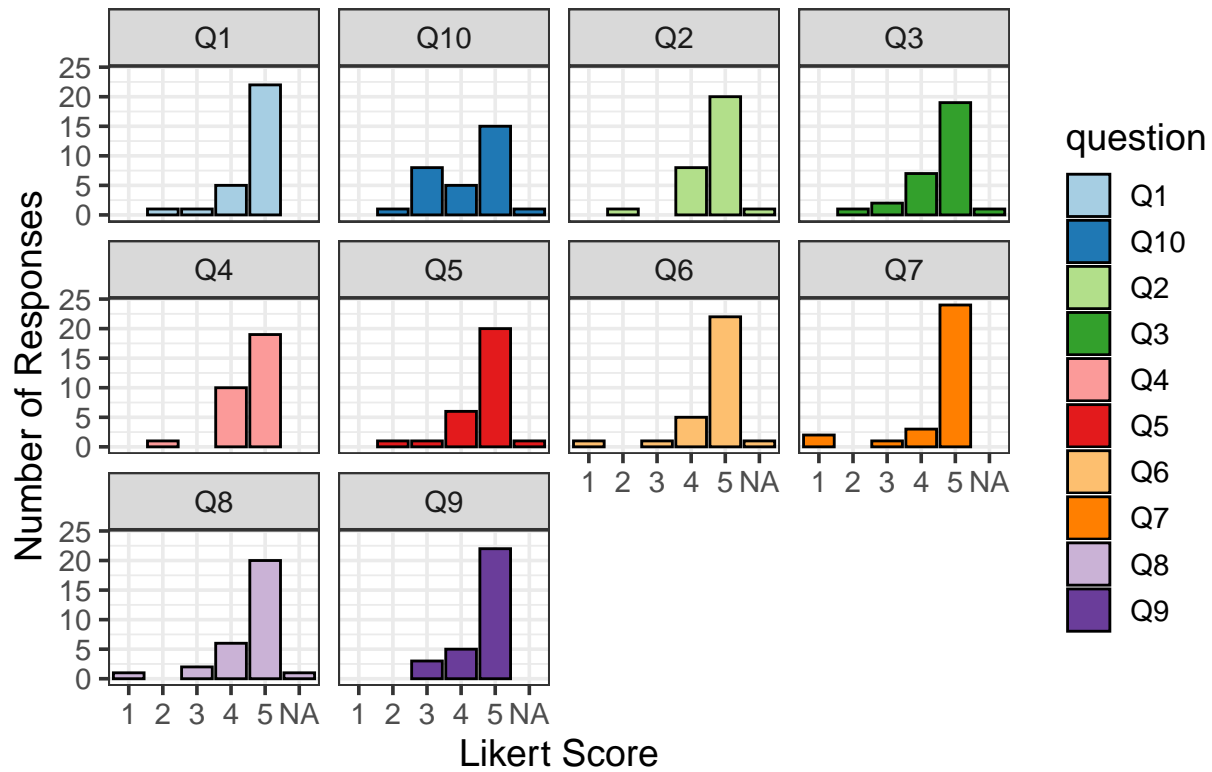
##
## Attaching package: 'janitor'

## The following objects are masked from 'package:stats':
##
##   chisq.test, fisher.test
```

Bar Chart of Likert Responses (Pre-Survey)

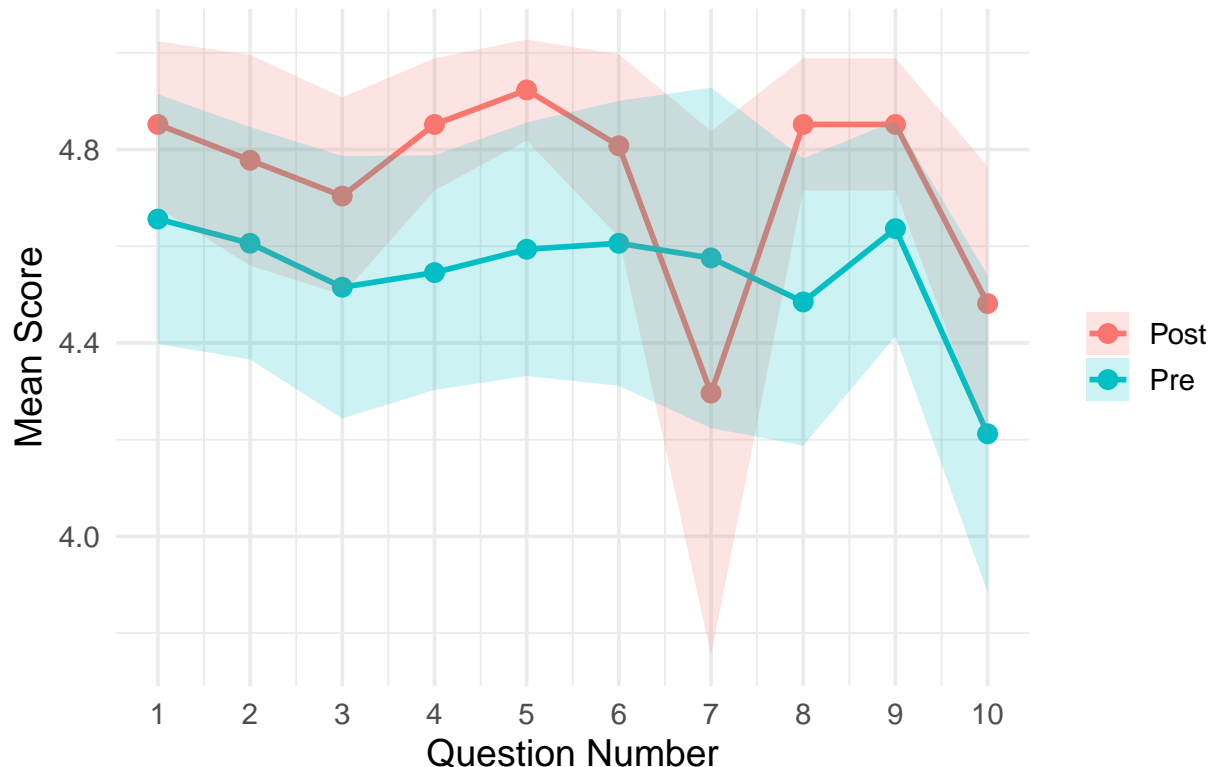


Bar Chart of Likert Responses (Post-Survey)



```
## Warning: Using 'size' aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use 'linewidth' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was
## generated.
```

Pre vs. Post Survey Mean Scores with 95% Confidence



```
library(ordinal)
```

```
##
## Attaching package: 'ordinal'
```

```
## The following object is masked from 'package:dplyr':
##
## slice
```

```
model_ordinal <- clmm(
  score ~ time
  + (1 | patient_id),
  data = combined_data
)
```

```
summary(model_ordinal)
```

```
## Cumulative Link Mixed Model fitted with the Laplace approximation
##
## formula: score ~ time + (1 | patient_id)
## data: combined_data
##
## link threshold nobis logLik AIC niter max.grad cond.H
## logit flexible 560 -331.85 675.70 258(1825) 3.11e-05 6.0e+01
```

```
##
## Random effects:
##   Groups      Name      Variance Std.Dev.
## patient_id (Intercept) 5.332    2.309
## Number of groups: patient_id 34
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## timePre  -0.6493     0.2845  -2.282   0.0225 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Threshold coefficients:
##           Estimate Std. Error z value
## 1|2  -6.7192     0.6727  -9.989
## 2|3  -6.0125     0.6138  -9.796
## 3|4  -4.3695     0.5318  -8.217
## 4|5  -2.1043     0.4847  -4.341
## (6 observations deleted due to missingness)
```

```
model_fixed <- clm(
  score ~ time,
  data = combined_data
)
```

```
summary(model_fixed)
```

```
## formula: score ~ time
## data: combined_data
##
## link threshold nobs logLik AIC niter max.grad cond.H
## logit flexible 560 -427.91 865.82 6(1) 2.90e-11 4.3e+01
##
## Coefficients:
##           Estimate Std. Error z value Pr(>|z|)
## timePre  -0.6796     0.2014  -3.375 0.000737 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Threshold coefficients:
##           Estimate Std. Error z value
## 1|2  -4.6447     0.3799 -12.227
## 2|3  -4.0728     0.3011 -13.528
## 3|4  -2.9143     0.2062 -14.132
## 4|5  -1.5006     0.1576  -9.524
## (6 observations deleted due to missingness)
```

```
model_ordinal <- clmm(
  score ~ time + Age + Gender
  + (1 | patient_id),
  data = combined_data
)
```

```
summary(model_ordinal)
```

```
## Cumulative Link Mixed Model fitted with the Laplace approximation
##
## formula: score ~ time + Age + Gender + (1 | patient_id)
## data:    combined_data
##
## link threshold nobs logLik AIC      niter      max.grad cond.H
## logit flexible  502  -289.91 595.82 408(2553) 3.56e-05 1.3e+02
##
## Random effects:
## Groups      Name          Variance Std.Dev.
## patient_id (Intercept) 5.192      2.279
## Number of groups:  patient_id 30
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## timePre    -0.8042      0.3083  -2.608  0.0091 **
## Age         0.3802      0.4832   0.787  0.4313
## GenderM    -0.3682      0.9257  -0.398  0.6908
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Threshold coefficients:
##              Estimate Std. Error z value
## 1|2    -7.2070      0.9182  -7.849
## 2|3    -6.4111      0.8631  -7.428
## 3|4    -4.7477      0.7945  -5.975
## 4|5    -2.4763      0.7542  -3.283
## (64 observations deleted due to missingness)
```

```
model_ordinal <- clmm(
  score ~ time + `Illness Severity/ Prism Score`
  + (1 | patient_id),
  data = combined_data
)
```

```
summary(model_ordinal)
```

```
## Cumulative Link Mixed Model fitted with the Laplace approximation
##
## formula: score ~ time + 'Illness Severity/ Prism Score' + (1 | patient_id)
## data:    combined_data
##
## link threshold nobs logLik AIC      niter      max.grad cond.H
## logit flexible  453  -235.66 485.32 342(2951) 4.08e-05 3.1e+03
##
## Random effects:
## Groups      Name          Variance Std.Dev.
## patient_id (Intercept) 6.4        2.53
## Number of groups:  patient_id 26
##
```

```
## Coefficients:
##                                Estimate Std. Error z value Pr(>|z|)
## timePre                      -0.91382    0.33035  -2.766  0.00567 **
## 'Illness Severity/ Prism Score' -0.08953    0.17372  -0.515  0.60631
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Threshold coefficients:
##      Estimate Std. Error z value
## 1|2   -8.535      1.747  -4.885
## 2|3   -7.476      1.701  -4.396
## 3|4   -5.787      1.659  -3.488
## 4|5   -3.400      1.629  -2.087
## (113 observations deleted due to missingness)
```

```
model_ordinal <- clmm(
  score ~ time + `Number of specialists involved in Care`
  + (1 | patient_id),
  data = combined_data
)

summary(model_ordinal)
```

```
## Cumulative Link Mixed Model fitted with the Laplace approximation
##
## formula: score ~ time + 'Number of specialists involved in Care' + (1 |
##      patient_id)
## data:    combined_data
##
## link threshold nobs logLik AIC      niter      max.grad cond.H
## logit flexible  454  -253.49 520.98 345(2413) 1.77e-05 7.4e+02
##
## Random effects:
## Groups      Name      Variance Std.Dev.
## patient_id (Intercept) 5.18      2.276
## Number of groups: patient_id 27
##
## Coefficients:
##                                Estimate Std. Error z value Pr(>|z|)
## timePre                      -0.9270    0.3267  -2.838  0.00454
## 'Number of specialists involved in Care' 0.2324    0.1685   1.379  0.16779
##
## timePre                      **
## 'Number of specialists involved in Care'
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Threshold coefficients:
##      Estimate Std. Error z value
## 1|2  -6.3596      1.1519  -5.521
## 2|3  -5.3133      1.0766  -4.935
## 3|4  -3.4846      1.0085  -3.455
## 4|5  -1.1942      0.9879  -1.209
## (112 observations deleted due to missingness)
```