poa_health_8-13

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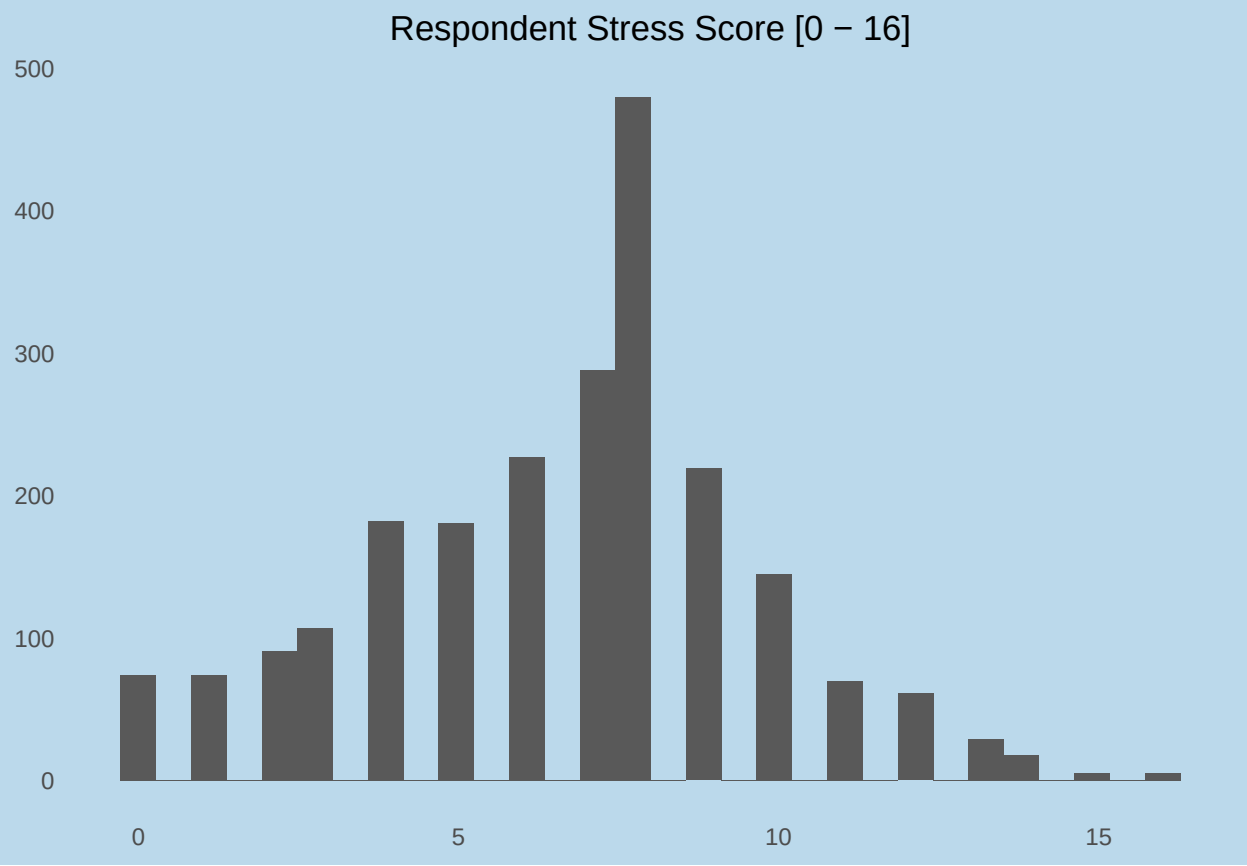
Contents

Demographics

```
wrangled %>% ggplot(aes(x = stress_score)) + geom_histogram() +
  ggtitle("Respondent Stress Score [0 - 16]") +
  xlab(NULL) + ylab(NULL)
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

```
## Warning: Removed 59 rows containing non-finite values (stat_bin).
```



4.1 - 4.2

4.1)Households with a case of COVID-19 [36]

1. Run distribution over population

2. Run distribution by sub-demographics

a. Compare and find gaps (test unequal proportions)

4.2)Individuals with a case of case of COVID-19[36]

1. Run distribution over population
2. Run distribution by sub-demographics

a. Compare and find gaps (test unequal proportions

```
mean(wrangled$posi_all, na.rm = TRUE)
```

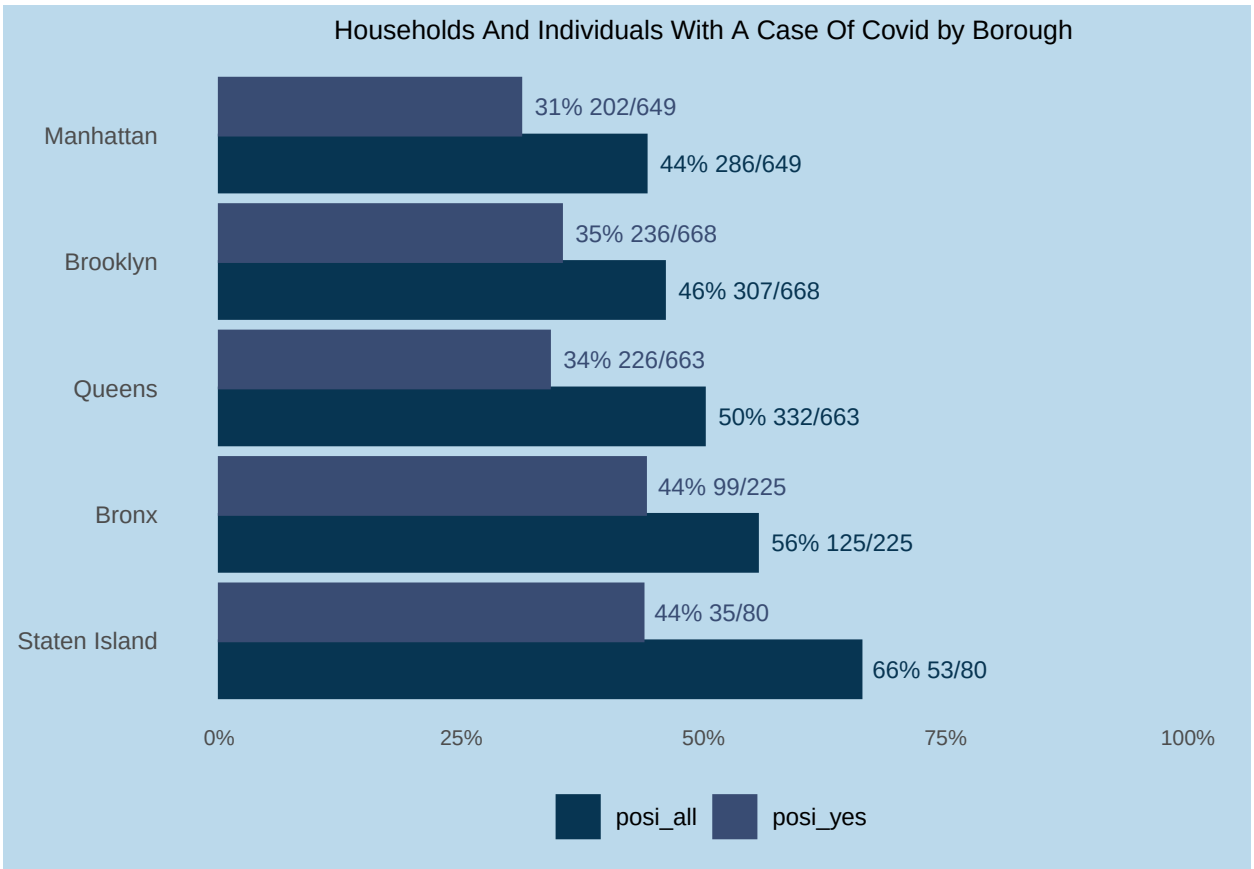
```
## [1] 0.4827133
```

```
mean(wrangled$posi_yes, na.rm = TRUE)
```

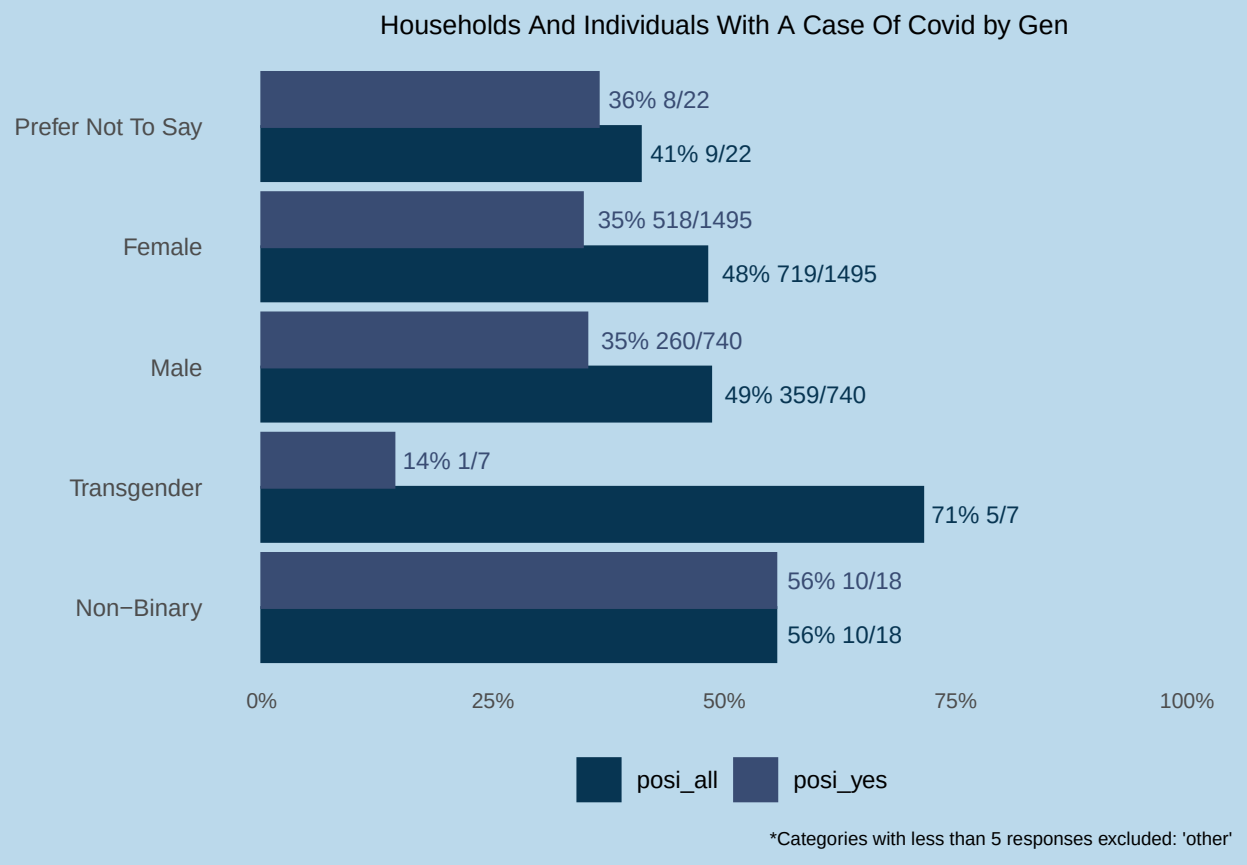
```
## [1] 0.3492341
```

```
make_plots(wrangled, by_vars = demographics,
         hyp_var = c("posi_all", "posi_yes"), title = "Households and Individuals with a case of COVID"
```

```
## $borough
## $borough$plot
```

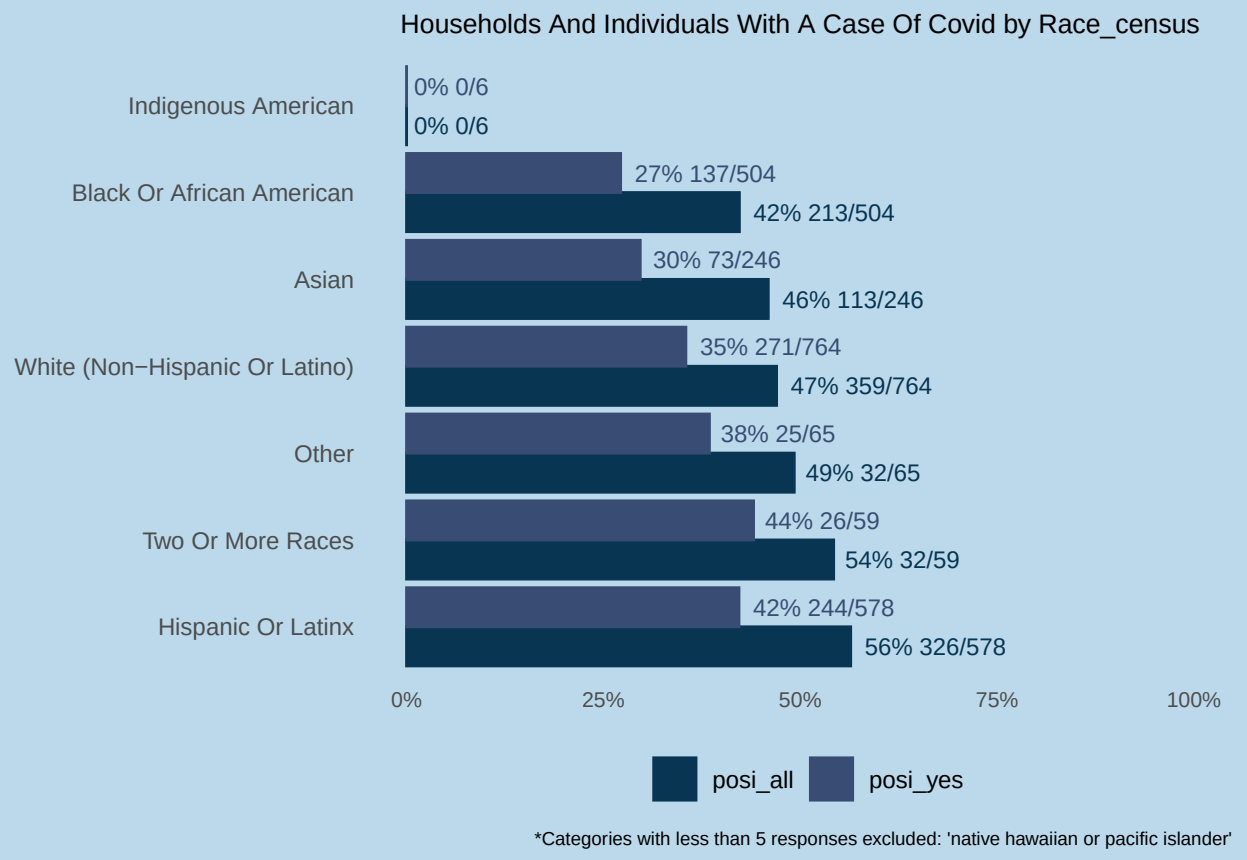


```
##
## $borough$p.values
## $borough$p.values$posi_all
##               manhattan brooklyn queens  bronx staten island
## manhattan            NA       NA     NA 0.0038       0.00028
## brooklyn             NA       NA     NA     NA       0.00092
## queens               NA       NA     NA     NA       0.00890
## bronx           0.00380       NA     NA     NA            NA
## staten island   0.00028  0.00092 0.0089     NA            NA
##
## $borough$p.values$posi_yes
##               manhattan queens brooklyn staten island   bronx
## manhattan            NA     NA       NA            NA 0.00062
## queens               NA     NA       NA            NA 0.00970
## brooklyn             NA     NA       NA            NA      NA
## staten island        NA     NA       NA            NA      NA
## bronx           0.00062 0.0097       NA            NA      NA
##
##
##
## $gen
## $gen$plot
```



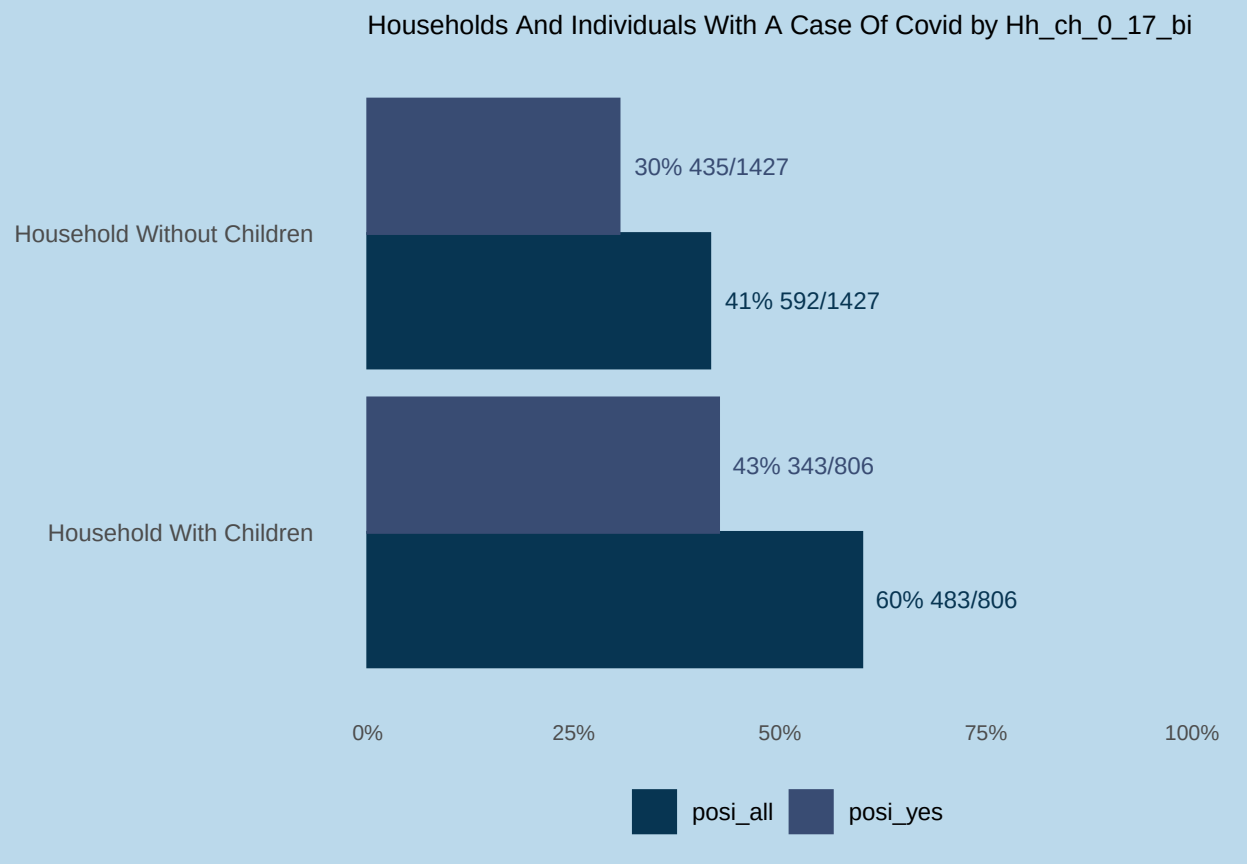

```
##
## $gen$p.values
```

```
## $gen$p.values$posi_all
##                   prefer not to say female male non-binary transgender
## prefer not to say                NA     NA   NA         NA          NA
## female                           NA     NA   NA         NA          NA
## male                             NA     NA   NA         NA          NA
## non-binary                       NA     NA   NA         NA          NA
## transgender                      NA     NA   NA         NA          NA
##
## $gen$p.values$posi_yes
##                   transgender female male prefer not to say non-binary
## transgender                NA     NA   NA                NA         NA
## female                     NA     NA   NA                NA         NA
## male                       NA     NA   NA                NA         NA
## prefer not to say          NA     NA   NA                NA         NA
## non-binary                 NA     NA   NA                NA         NA
##
##
##
## $race_census
## $race_census$plot
```

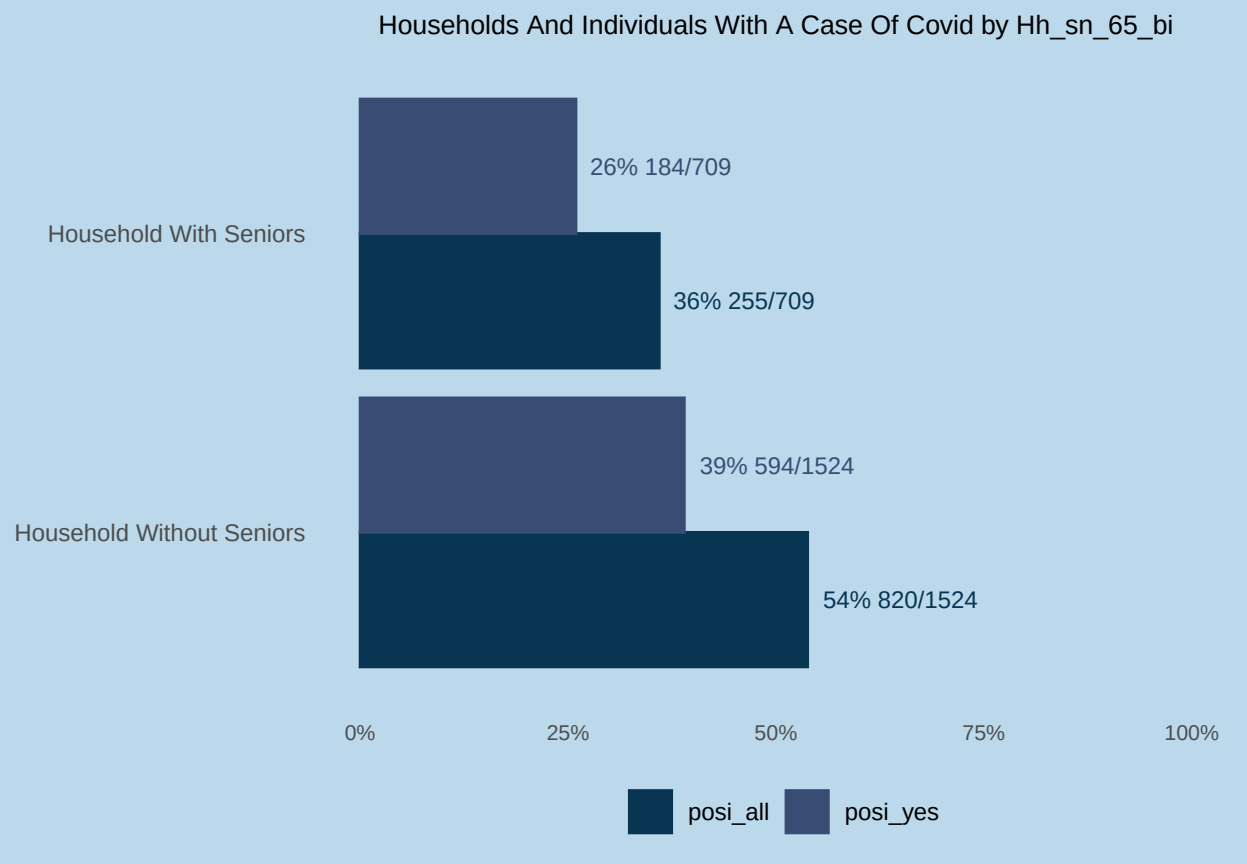



```
##
## $race_census$p.values
## $race_census$p.values$posi_all
##                                Indigenous American black or african american
```

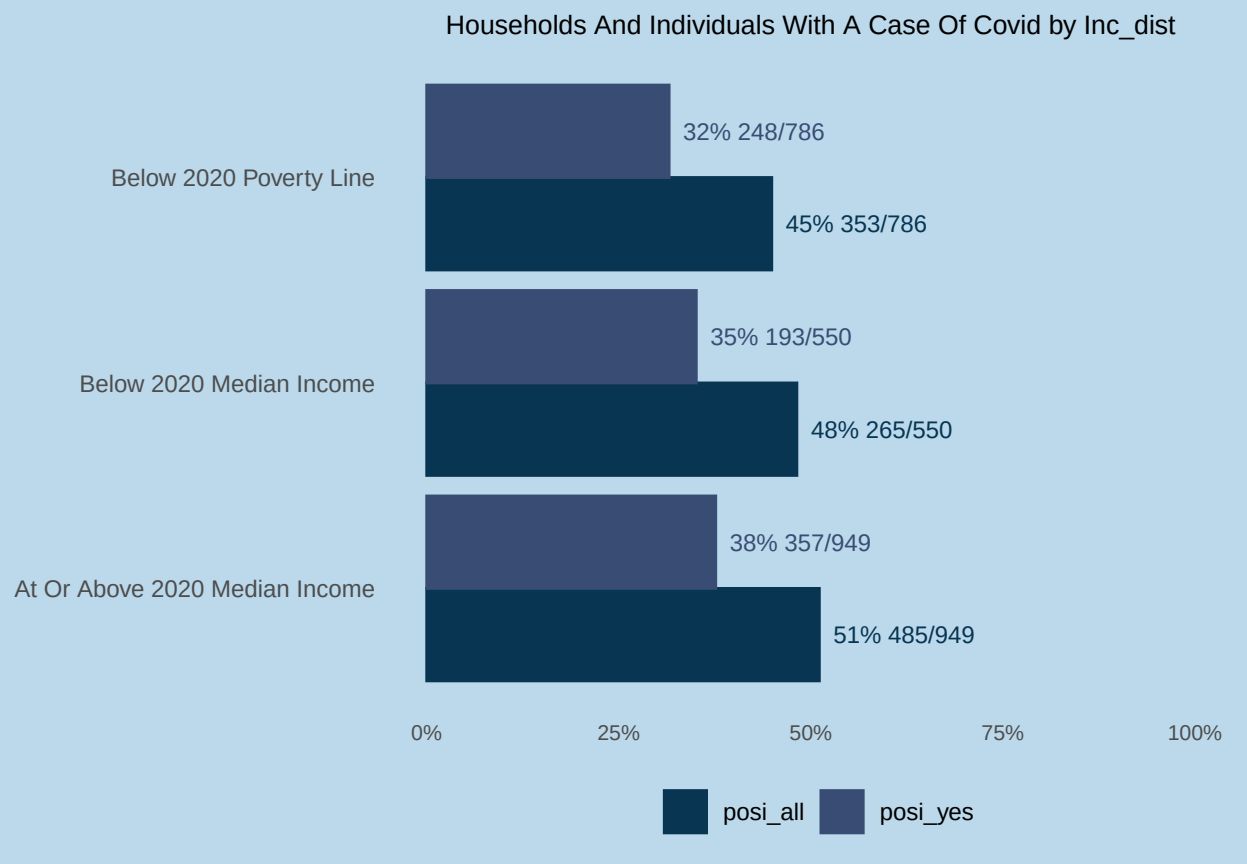
```
## Indigenous American                              NA                          NA
## black or african american                        NA                          NA
## asian                                            NA                          NA
## white (non-hispanic or latino)                   NA                          NA
## other                                            NA                          NA
## two or more races                                NA                          NA
## hispanic or latinx                               NA                     4.7e-06
##                                 asian white (non-hispanic or latino) other
## Indigenous American                NA                              NA    NA
## black or african american          NA                              NA    NA
## asian                              NA                              NA    NA
## white (non-hispanic or latino)     NA                              NA    NA
## other                              NA                              NA    NA
## two or more races                  NA                              NA    NA
## hispanic or latinx             0.0074                         0.00078    NA
##                                two or more races hispanic or latinx
## Indigenous American                           NA                 NA
## black or african american                     NA            4.7e-06
## asian                                         NA            7.4e-03
## white (non-hispanic or latino)                NA            7.8e-04
## other                                         NA                 NA
## two or more races                             NA                 NA
## hispanic or latinx                            NA                 NA
##
## $race_census$p.values$posi_yes
##                                Indigenous American black or african american
## Indigenous American                              NA                          NA
## black or african american                        NA                          NA
## asian                                            NA                          NA
## white (non-hispanic or latino)                   NA                     2.4e-03
## other                                            NA                          NA
## hispanic or latinx                               NA                     3.4e-07
## two or more races                                NA                          NA
##                                 asian white (non-hispanic or latino) other
## Indigenous American                NA                              NA    NA
## black or african american          NA                          0.0024    NA
## asian                              NA                              NA    NA
## white (non-hispanic or latino)     NA                              NA    NA
## other                              NA                              NA    NA
## hispanic or latinx             0.00094                             NA    NA
## two or more races                  NA                              NA    NA
##                                hispanic or latinx two or more races
## Indigenous American                            NA                 NA
## black or african american                 3.4e-07                 NA
## asian                                     9.4e-04                 NA
## white (non-hispanic or latino)                 NA                 NA
## other                                          NA                 NA
## hispanic or latinx                             NA                 NA
## two or more races                              NA                 NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```




```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$posi_all
##                            household without children household with children
## household without children                          NA                   8e-17
## household with children                          8e-17                      NA
##
## $hh_ch_0_17_bi$p.values$posi_yes
##                            household without children household with children
## household without children                          NA                 1.2e-08
## household with children                        1.2e-08                      NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$posi_all
##                           household with seniors household without seniors
## household with seniors                        NA                   5.8e-15
## household without seniors               5.8e-15                        NA
##
## $hh_sn_65_bi$p.values$posi_yes
##                           household with seniors household without seniors
## household with seniors                        NA                   2.4e-09
## household without seniors               2.4e-09                        NA
##
##
##
## $inc_dist
## $inc_dist$plot
```




```
##
## $inc_dist$p.values
## $inc_dist$p.values$posi_all
##                                 below 2020 poverty line below 2020 median income
## below 2020 poverty line                              NA                       NA
## below 2020 median income                             NA                       NA
## at or above 2020 median income                       NA                       NA
##                                 at or above 2020 median income
## below 2020 poverty line                                     NA
## below 2020 median income                                    NA
## at or above 2020 median income                              NA
##
## $inc_dist$p.values$posi_yes
##                                 below 2020 poverty line below 2020 median income
## below 2020 poverty line                              NA                       NA
## below 2020 median income                             NA                       NA
## at or above 2020 median income                   0.0096                       NA
##                                 at or above 2020 median income
## below 2020 poverty line                                 0.0096
## below 2020 median income                                    NA
## at or above 2020 median income                              NA
```

```
cat("Plots for by gen and inc_dist are not showing at least one statistically significant result")
```

```
## Plots for by gen and inc_dist are not showing at least one statistically significant result
```

4.3)People who have received a booster vaccine dose [38]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k)

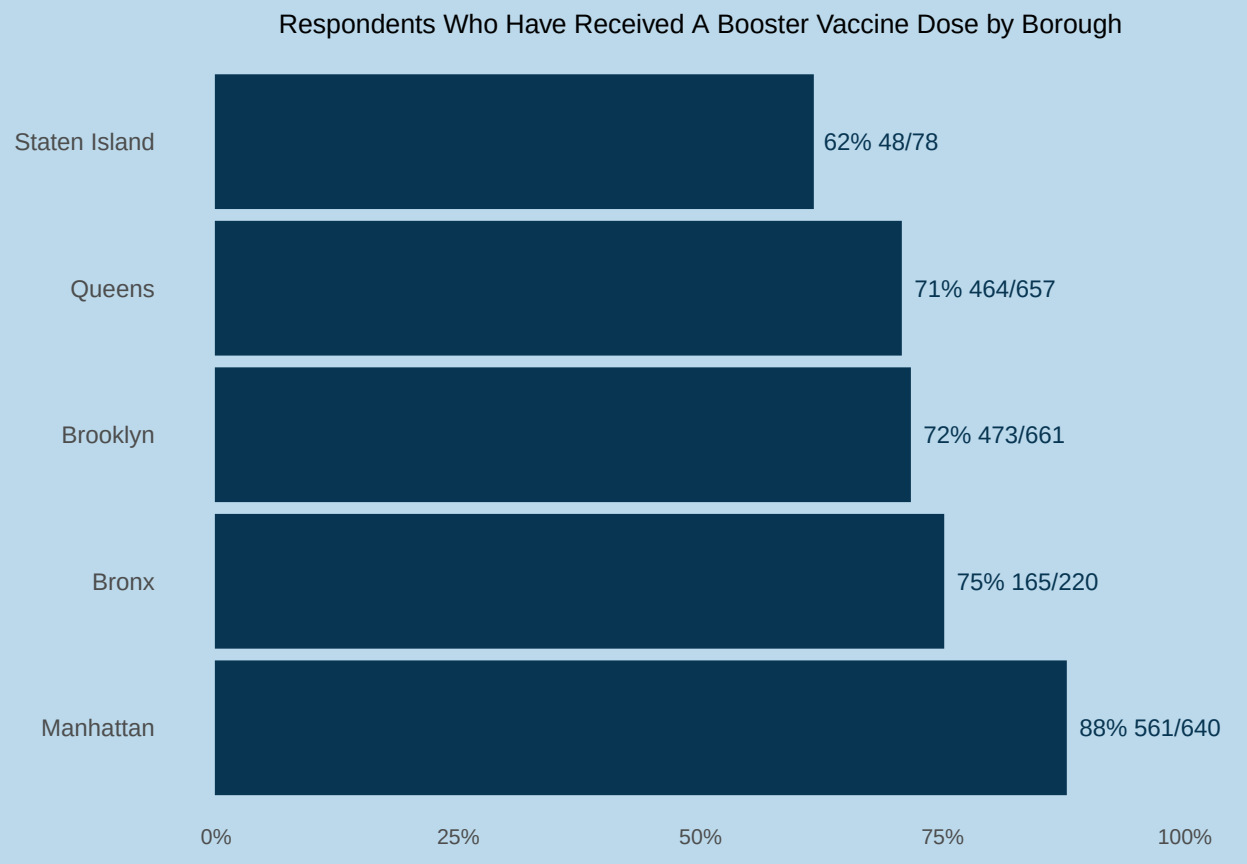
a. Compare and find gaps (test unequal proportions)

```
mean(wrangled$boost_bi, na.rm = TRUE)
```

```
## [1] 0.758422
```

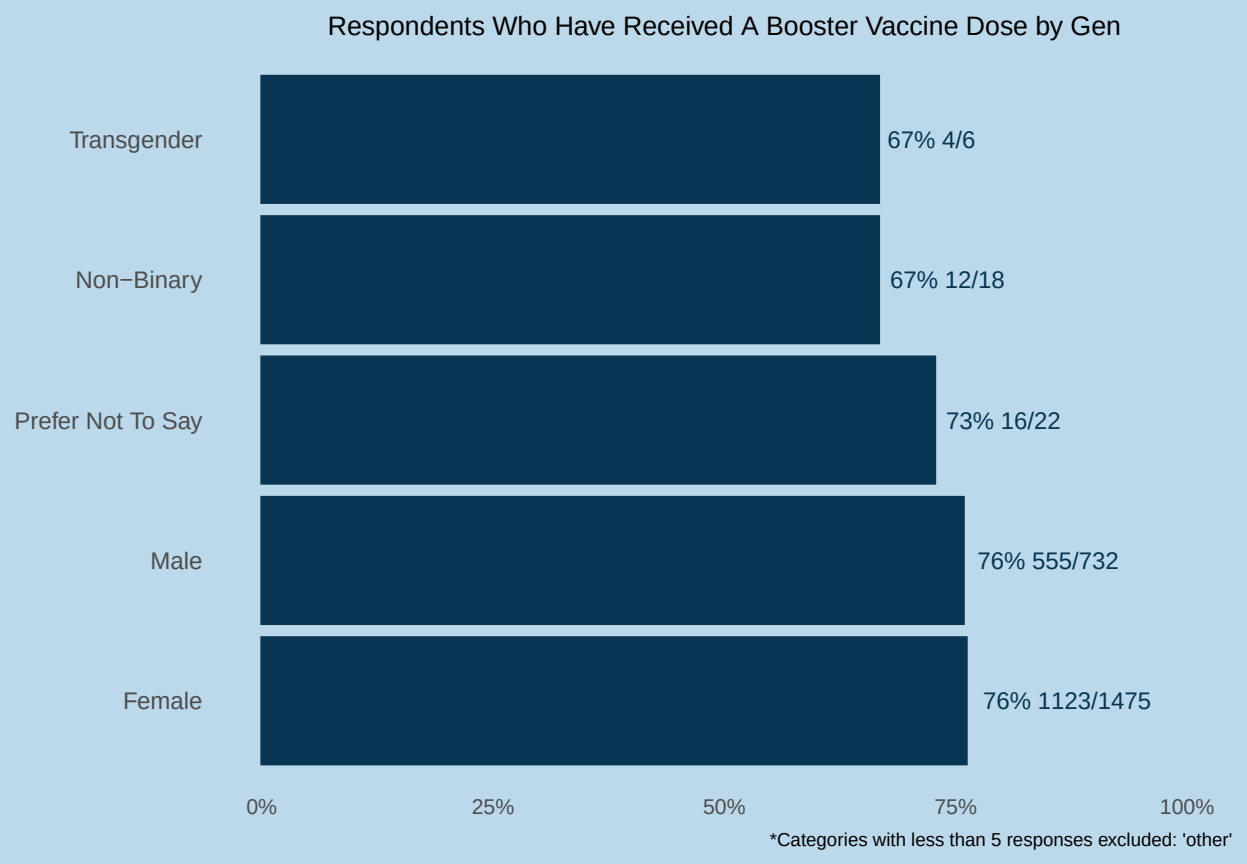
```
make_plots(wrangled, by_vars=demographics, hyp_var="boost_bi", title = "Respondents who have received a
```

```
## $borough
## $borough$plot
```

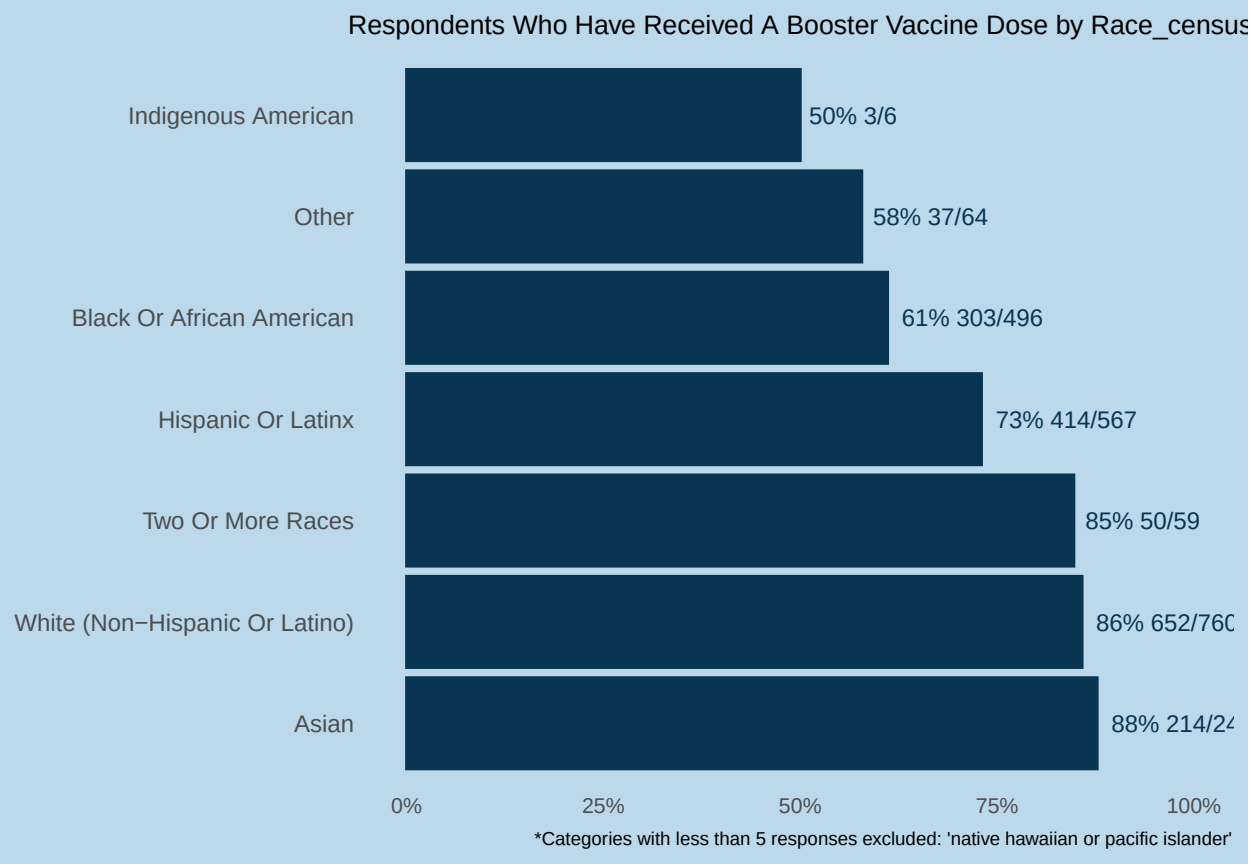



```
##
## $borough$p.values
## $borough$p.values$boost_bi
##                staten island  queens brooklyn   bronx manhattan
## staten island             NA      NA       NA      NA   3.6e-09
## queens                    NA      NA       NA      NA   8.3e-14
## brooklyn                  NA      NA       NA      NA   1.1e-12
```

```
## bronx                    NA       NA        NA       NA    1.3e-05
## manhattan           3.6e-09 8.3e-14  1.1e-12 1.3e-05         NA
##
##
##
## $gen
## $gen$plot
```

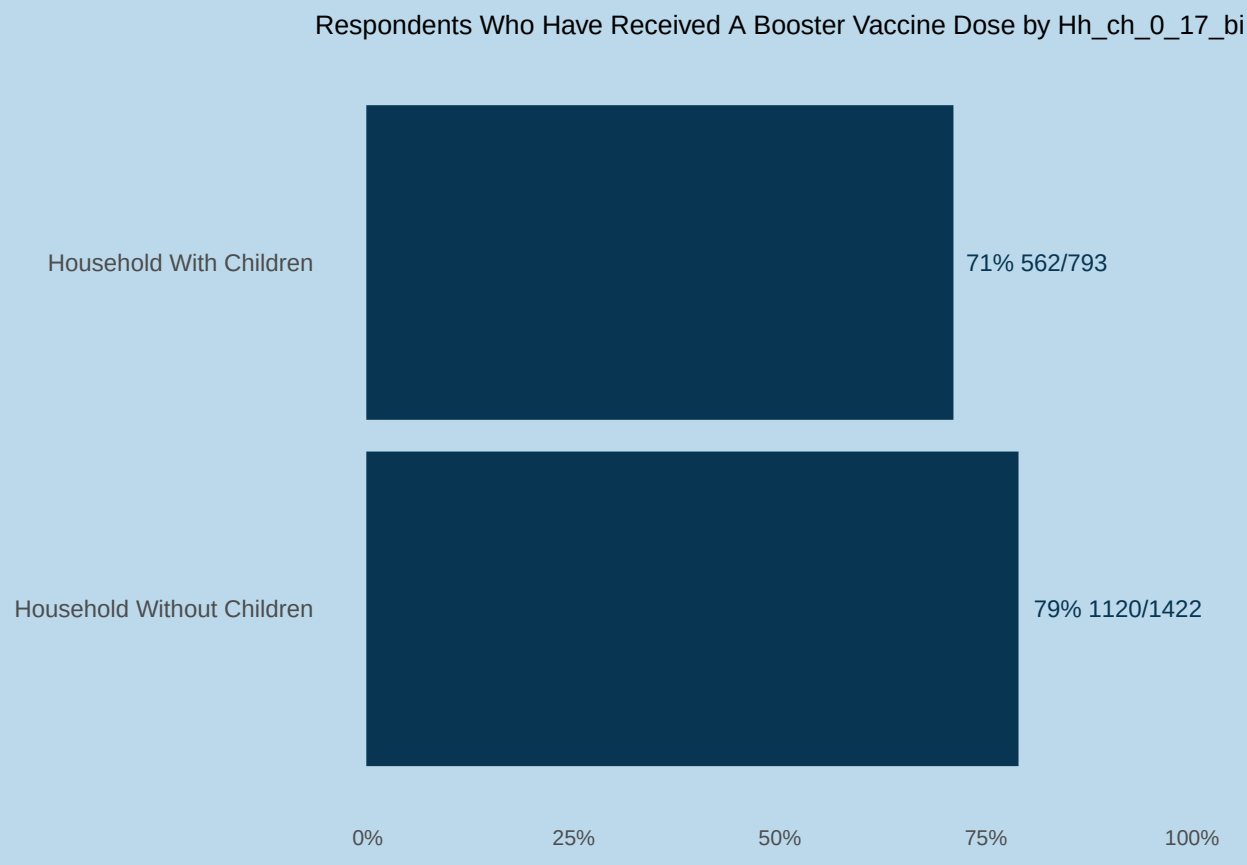



```
##
## $gen$p.values
## $gen$p.values$boost_bi
##                   non-binary transgender prefer not to say male female
## non-binary                NA          NA                NA   NA     NA
## transgender               NA          NA                NA   NA     NA
## prefer not to say         NA          NA                NA   NA     NA
## male                      NA          NA                NA   NA     NA
## female                    NA          NA                NA   NA     NA
##
##
##
## $race_census
## $race_census$plot
```

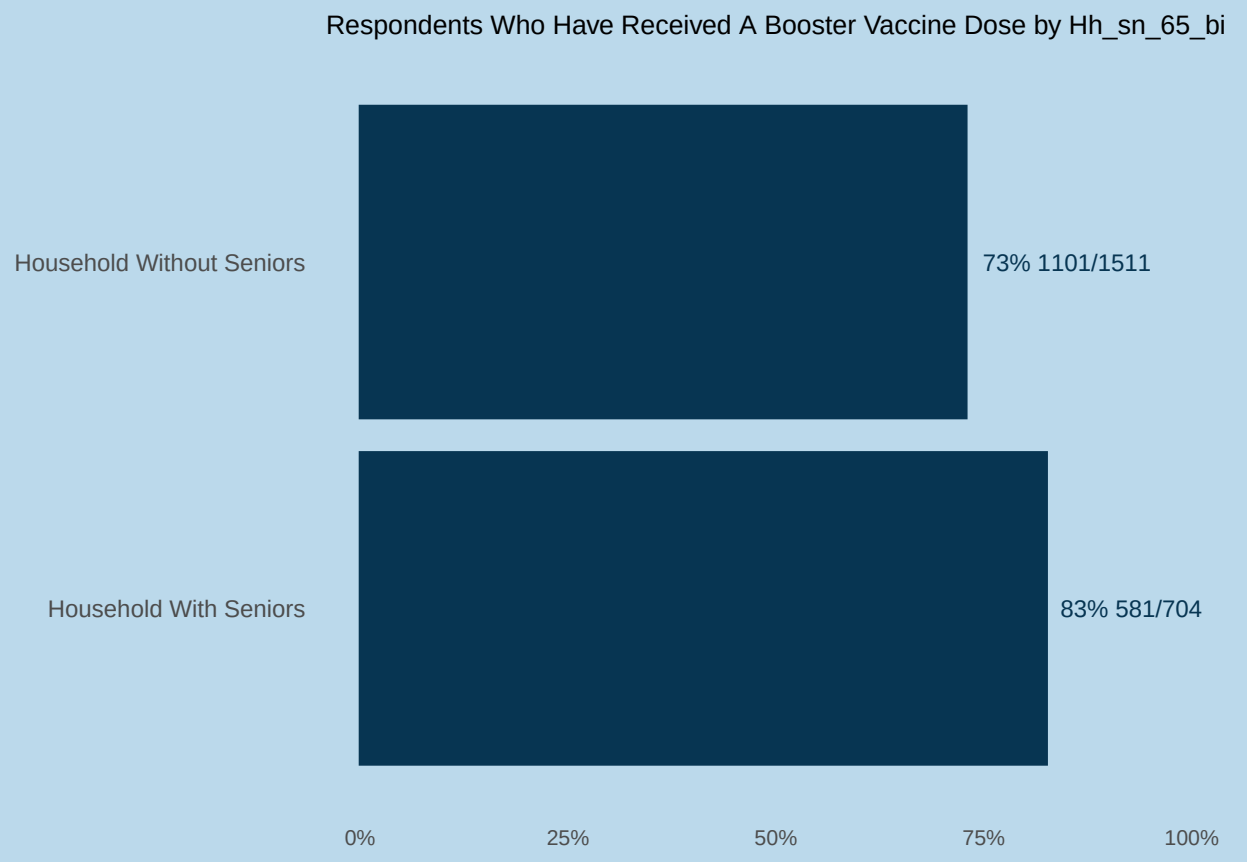



```
##
## $race_census$p.values
## $race_census$p.values$boost_bi
##                                Indigenous American   other
## Indigenous American                             NA      NA
## other                                           NA      NA
## black or african american                       NA      NA
## hispanic or latinx                              NA      NA
## two or more races                               NA 2.1e-03
## white (non-hispanic or latino)                  NA 1.8e-08
## asian                                           NA 1.2e-07
##                                black or african american hispanic or latinx
## Indigenous American                                   NA                 NA
## other                                                 NA                 NA
## black or african american                             NA            4.6e-05
## hispanic or latinx                                4.6e-05                 NA
## two or more races                                 6.1e-04                 NA
## white (non-hispanic or latino)                    2.4e-23            1.1e-08
## asian                                             2.3e-13            6.9e-06
##                                two or more races white (non-hispanic or latino)
## Indigenous American                          NA                              NA
## other                                   0.00210                         1.8e-08
## black or african american               0.00061                         2.4e-23
## hispanic or latinx                           NA                         1.1e-08
## two or more races                            NA                              NA
## white (non-hispanic or latino)               NA                              NA
```

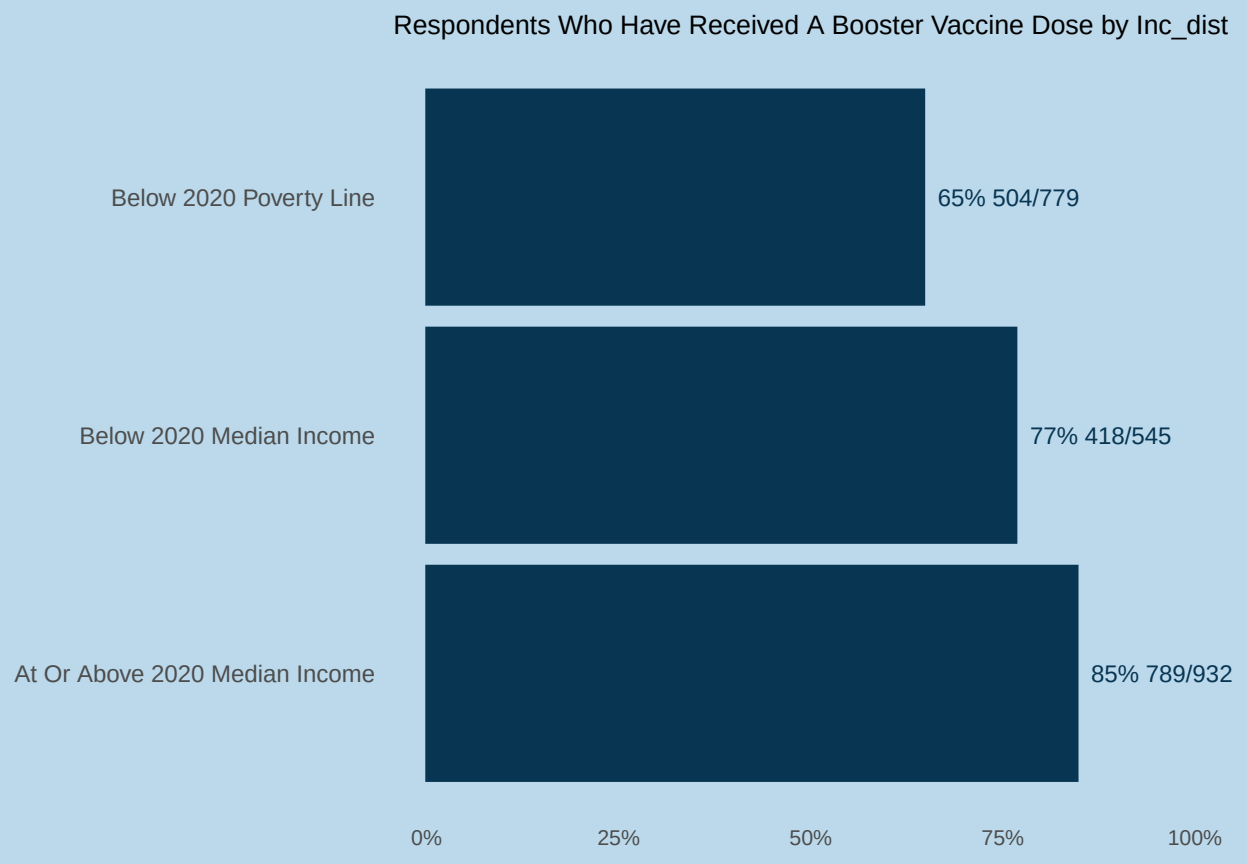
```
## asian                                          NA                                NA
##                                  asian
## Indigenous American                 NA
## other                            1.2e-07
## black or african american        2.3e-13
## hispanic or latinx               6.9e-06
## two or more races                   NA
## white (non-hispanic or latino)      NA
## asian                               NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```




```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$boost_bi
##                             household with children household without children
## household with children                          NA                     3.9e-05
## household without children                 3.9e-05                          NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$boost_bi
##                            household without seniors household with seniors
## household without seniors                        NA                9.6e-07
## household with seniors                      9.6e-07                     NA
##
##
##
## $inc_dist
## $inc_dist$plot
```




```
##
## $inc_dist$p.values
## $inc_dist$p.values$boost_bi
##                                 below 2020 poverty line below 2020 median income
## below 2020 poverty line                              NA                   4.0e-06
## below 2020 median income                        4.0e-06                        NA
## at or above 2020 median income                  1.9e-21                   1.8e-04
##                                 at or above 2020 median income
## below 2020 poverty line                                1.9e-21
## below 2020 median income                               1.8e-04
## at or above 2020 median income                              NA
```

```
cat("Plot for gen is not showing at least one statistically significant result")
```

```
## Plot for gen is not showing at least one statistically significant result
```

4.4)People who returned to work in person are more likely to be boosted against COVID-19

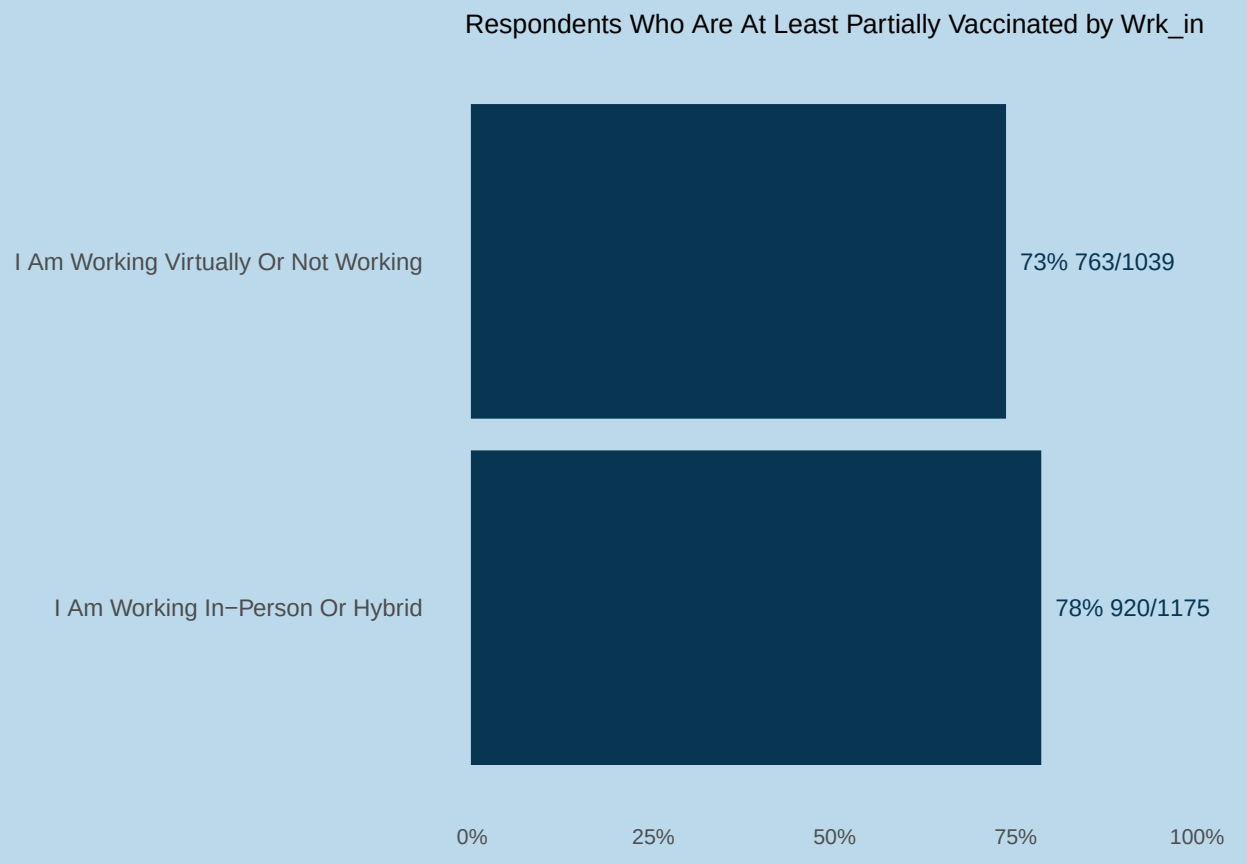
1. Find respondents who returned to work in person or hybrid [19]

a. Find proportion of subset who reported being at least partially vaccinated against COVID-19 [32]pothes

b. Find proportion not in subset who reported being at least partially vaccinated against COVID-19 and compare (test unequal proportions)

```
make_plots(wrangled, by_vars = "wrk_in", "boost_bi", title = "Respondents who are at least partially va
```

```
## $wrk_in
## $wrk_in$plot
```




```
##
## $wrk_in$p.values
## $wrk_in$p.values$boost_bi
##                                       I am working virtually or not working
## I am working virtually or not working                                    NA
## I am working in-person or hybrid                                     0.0087
##                                       I am working in-person or hybrid
## I am working virtually or not working                           0.0087
## I am working in-person or hybrid                                    NA
```

4.5, 4.14

4.5)People who ranked the government response as average or above average were more likely to be boosted or planning to get boosted against COVID-19

1. Find respondents who rated the government response as average, good, or excellent [31]

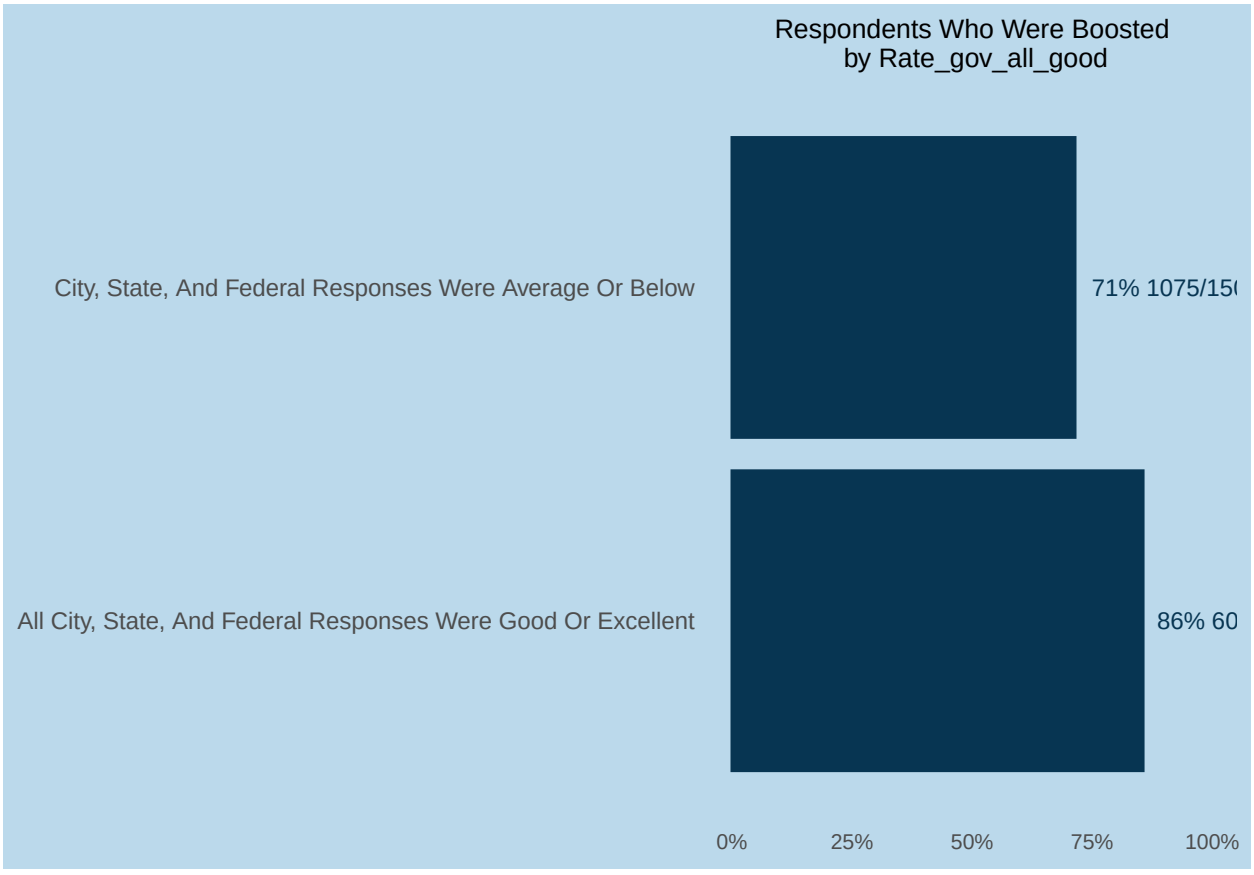
a. Find proportion of subset who reported being boosted at least partially planning to get boosted against COVID-19 [37]
b. Find proportion not in subset who reported being at boosted or at least partly getting boosted against COVID-19 and compare (test unequal proportions)

4.14) People who rated government services (response of government) above average were more likely to be boosted

1. Find proportion of population who rate government services above average (city/state or federal)
2. Find the booster status amongst the population
3. Compare and contrast with the population who rated the response of the government below average.

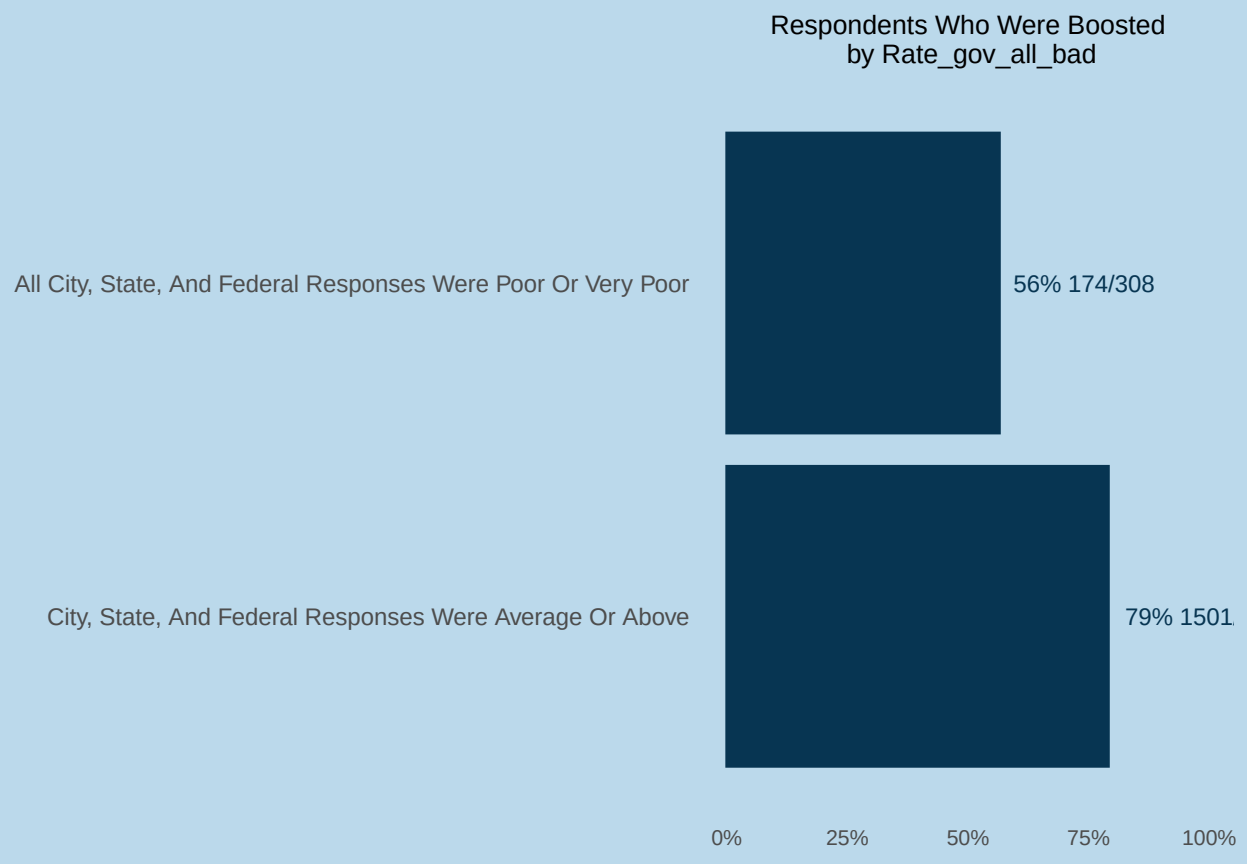
```
make_plots(wrangled, by_var =c("rate_gov_all_good", "rate_gov_all_bad"), hyp_var ="boost_bi",
           title = "Respondents who were boosted\n")
```

```
## $rate_gov_all_good
## $rate_gov_all_good$plot
```




```
##
## $rate_gov_all_good$p.values
## $rate_gov_all_good$p.values$boost_bi
##                                                          city, state, and federal responses were
## city, state, and federal responses were average or below
```

```
## all city, state, and federal responses were good or excellent
##                                                                 all city, state, and federal responses
## city, state, and federal responses were average or below
## all city, state, and federal responses were good or excellent
##
##
##
## $rate_gov_all_bad
## $rate_gov_all_bad$plot
```




```
##
## $rate_gov_all_bad$p.values
## $rate_gov_all_bad$p.values$boost_bi
##                                                                 all city, state, and federal responses
## all city, state, and federal responses were poor or very poor
## city, state, and federal responses were average or above
##                                                                 city, state, and federal responses were
## all city, state, and federal responses were poor or very poor
## city, state, and federal responses were average or above
```

4.6)People who have been discriminated against or are worried about discrimination due to COVID-19 [35]]

1. Run distribution over population

2. Run distribution by sub-demographics

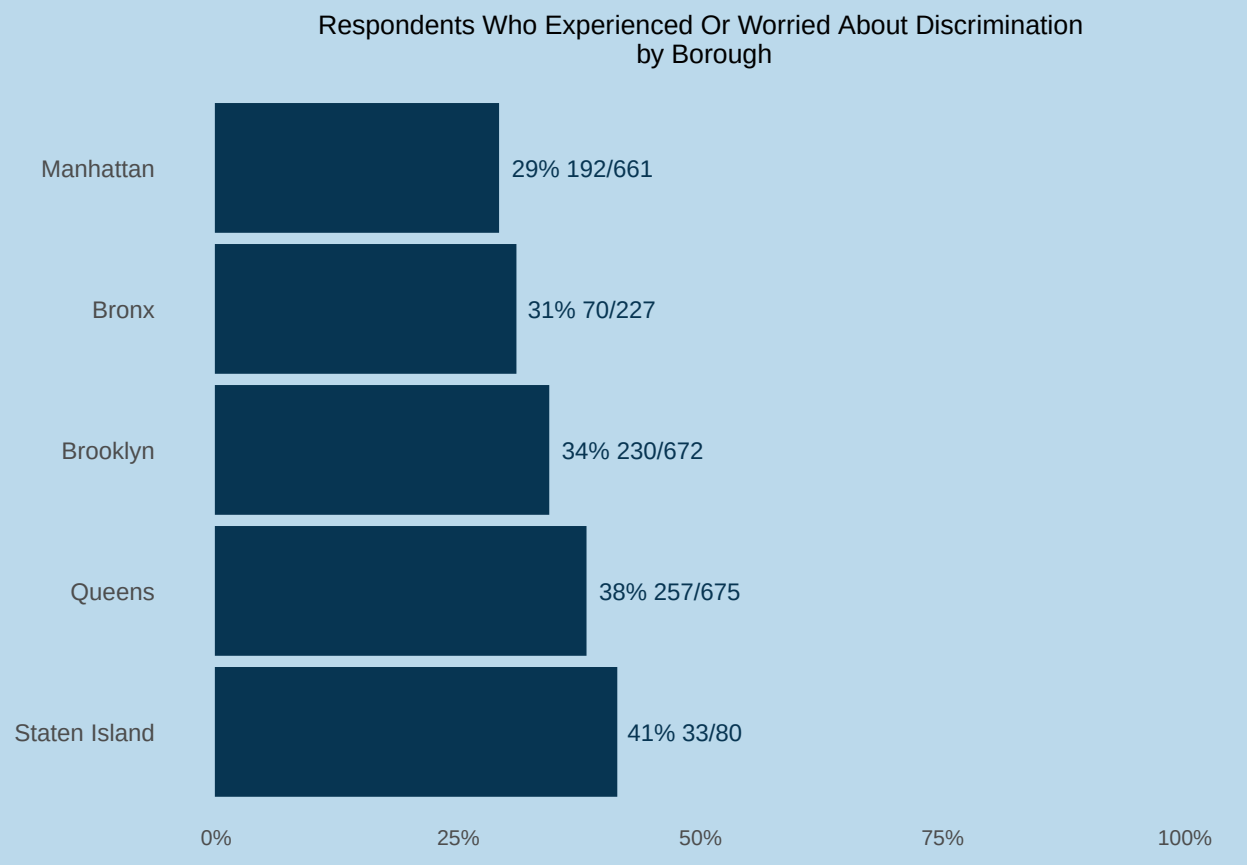
a. Compare and find gaps (test unequal proportions)

```
mean(wrangled$discrim_bi, na.rm = TRUE)
```

```
## [1] 0.337797
```

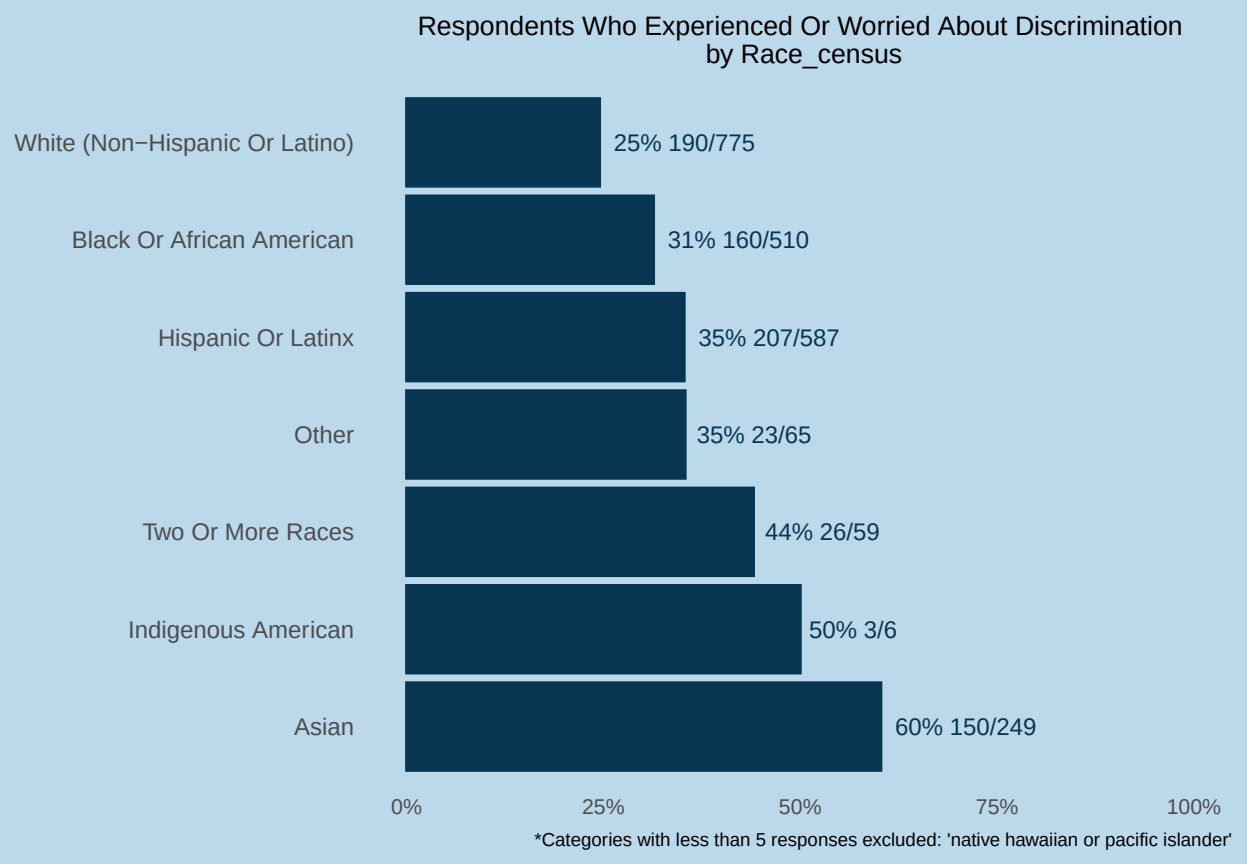
```
make_plots(wrangled, demographics, "discrim_bi", title = "Respondents who experienced or worried about d
```

```
## $borough
## $borough$plot
```



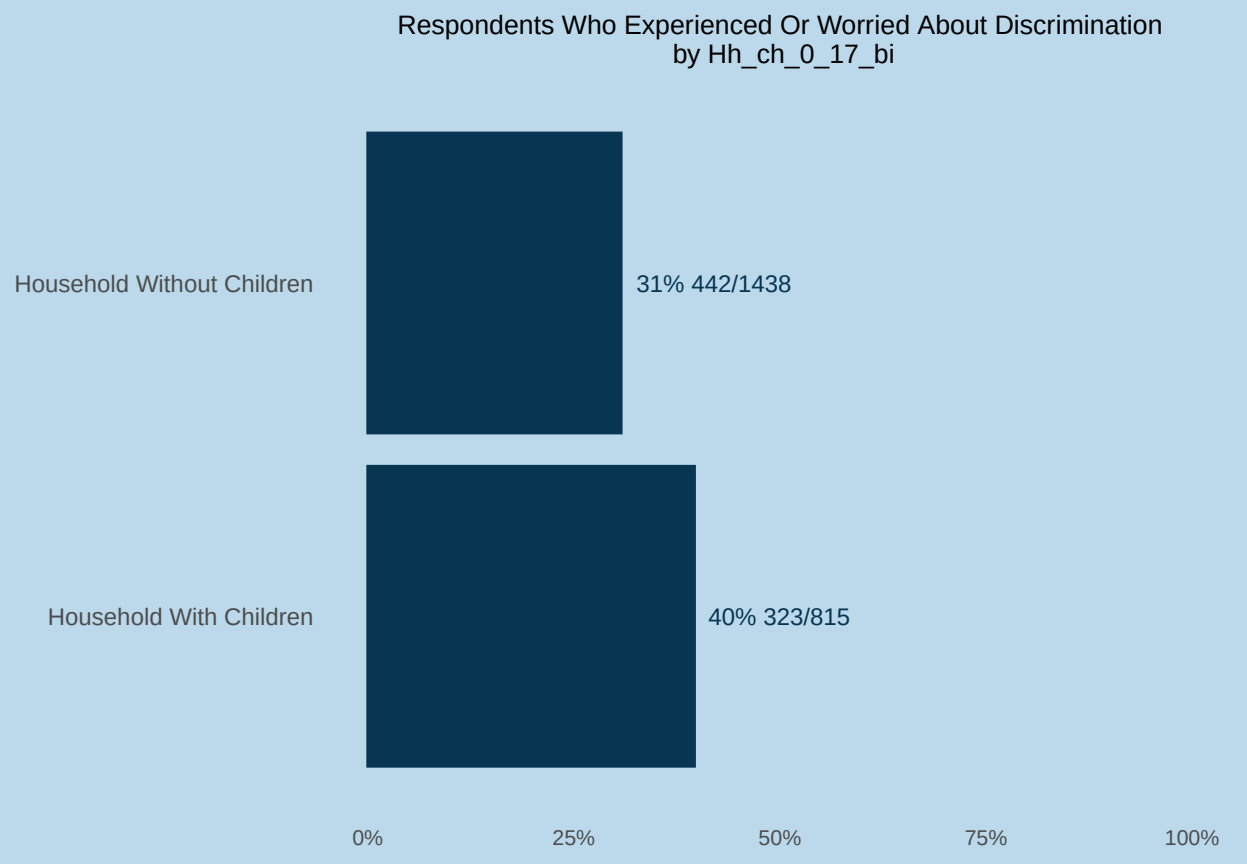

```
##
## $borough$p.values
## $borough$p.values$discrim_bi
##               manhattan bronx brooklyn  queens staten island
## manhattan            NA    NA       NA 0.00059            NA
## bronx                NA    NA       NA      NA            NA
## brooklyn             NA    NA       NA      NA            NA
## queens          0.00059    NA       NA      NA            NA
## staten island        NA    NA       NA      NA            NA
##
```

```
##
##
## $gen
## NULL
##
## $race_census
## $race_census$plot
```



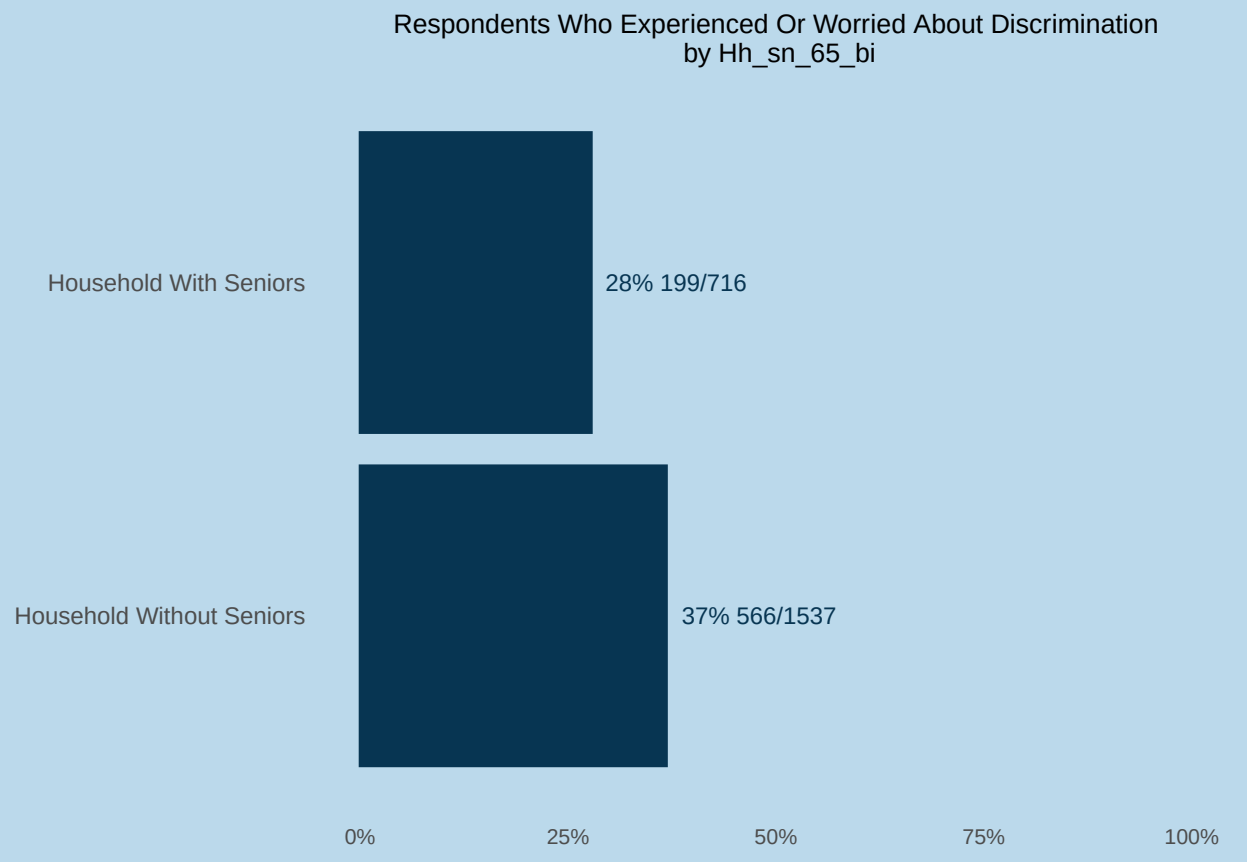

```
##
## $race_census$p.values
## $race_census$p.values$discrim_bi
##                                 white (non-hispanic or latino)
## white (non-hispanic or latino)                             NA
## black or african american                                8.4e-03
## hispanic or latinx                                       2.0e-05
## other                                                      NA
## two or more races                                        1.6e-03
## Indigenous American                                        NA
## asian                                                    4.8e-25
##                                 black or african american hispanic or latinx
## white (non-hispanic or latino)                   8.4e-03            2.0e-05
## black or african american                             NA                 NA
## hispanic or latinx                                    NA                 NA
## other                                                 NA                 NA
## two or more races                                     NA                 NA
```

```
## Indigenous American                                    NA                 NA
## asian                                                5.6e-14            4.1e-11
##                                     other two or more races Indigenous American
## white (non-hispanic or latino)                           NA             0.0016
## black or african american                                NA                 NA
## hispanic or latinx                                       NA                 NA
## other                                                    NA                 NA
## two or more races                                        NA                 NA
## Indigenous American                                      NA                 NA
## asian                                               0.00057                 NA
##                                     asian
## white (non-hispanic or latino) 4.8e-25
## black or african american      5.6e-14
## hispanic or latinx             4.1e-11
## other                          5.7e-04
## two or more races                   NA
## Indigenous American                 NA
## asian                               NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```




```
##
```

```
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$discrim_bi
##                            household without children household with children
## household without children                         NA                 2.3e-05
## household with children                        2.3e-05                      NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$discrim_bi
##                            household with seniors household without seniors
## household with seniors                         NA                   3.1e-05
## household without seniors                 3.1e-05                        NA
##
##
##
## $inc_dist
## NULL
```

```
cat("Plots for gen and inc_dist do not show at least one statistically significant result")
```

```
## Plots for gen and inc_dist do not show at least one statistically significant result
```

4.7)People who have experienced abuse or violence due to COVID-19 [34]

1. Run distribution over population
2. Run distribution by sub-demographics (a-k)

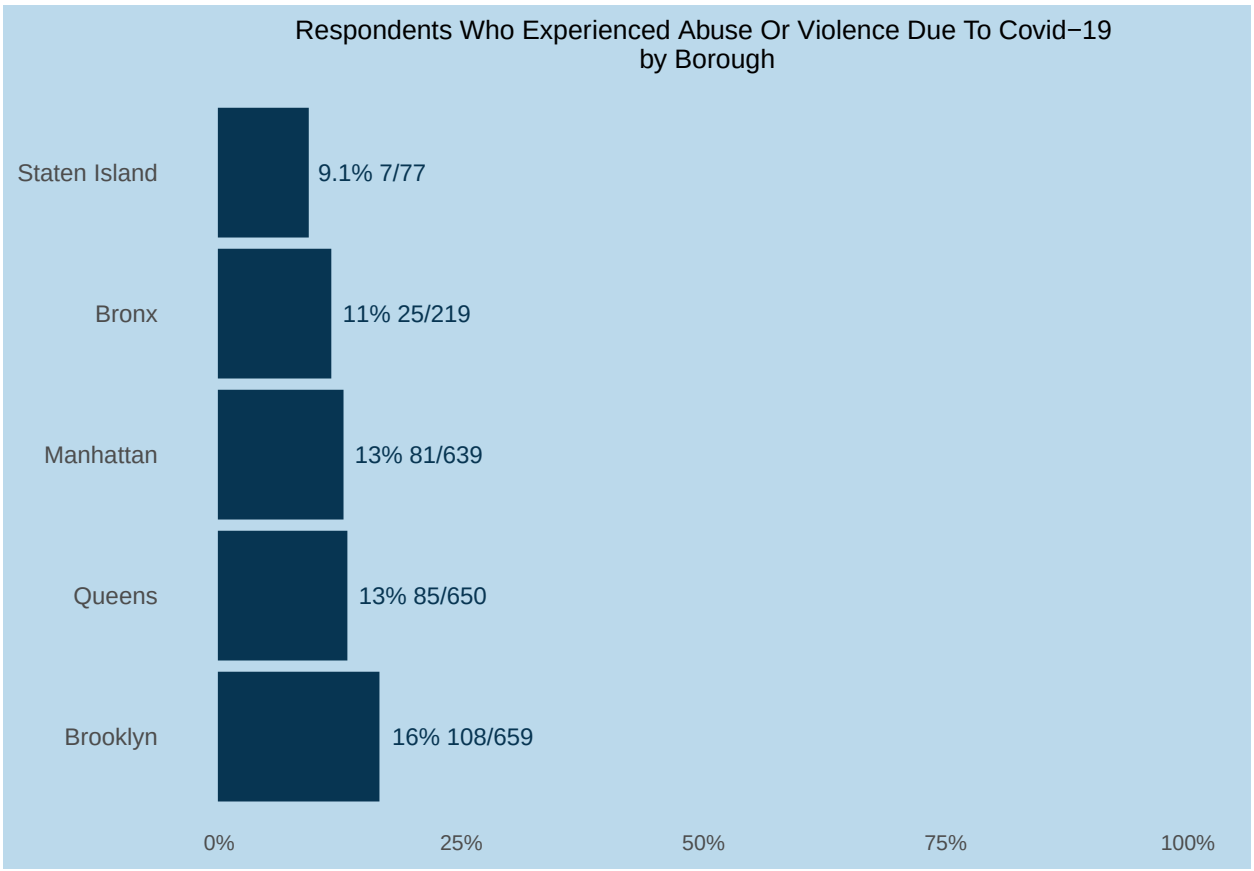
a. Compare and find gaps (test unequal proportions)

```
mean(wrangled$exp_ab_or_vi, na.rm = TRUE)
```

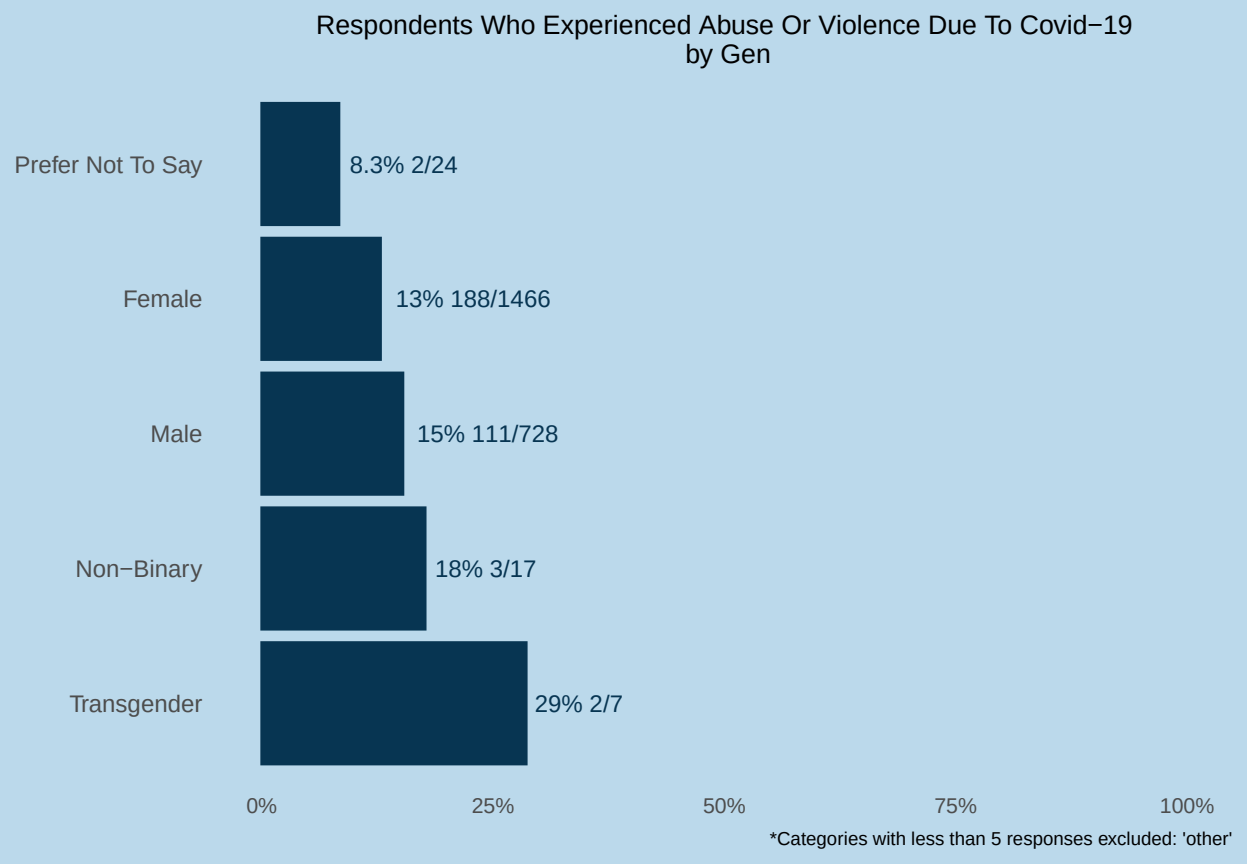
```
## [1] 0.1363636
```

```
#poa %>% mutate(exp_ab_or_vi = exp_ab_or_vi == 1)
make_plots(wrangled, by_vars = demographics, hyp_var = "exp_ab_or_vi",
           title = "Respondents who experienced Abuse or Violence due to COVID-19\n", show = TRUE)
```

```
## $borough
## $borough$plot
```

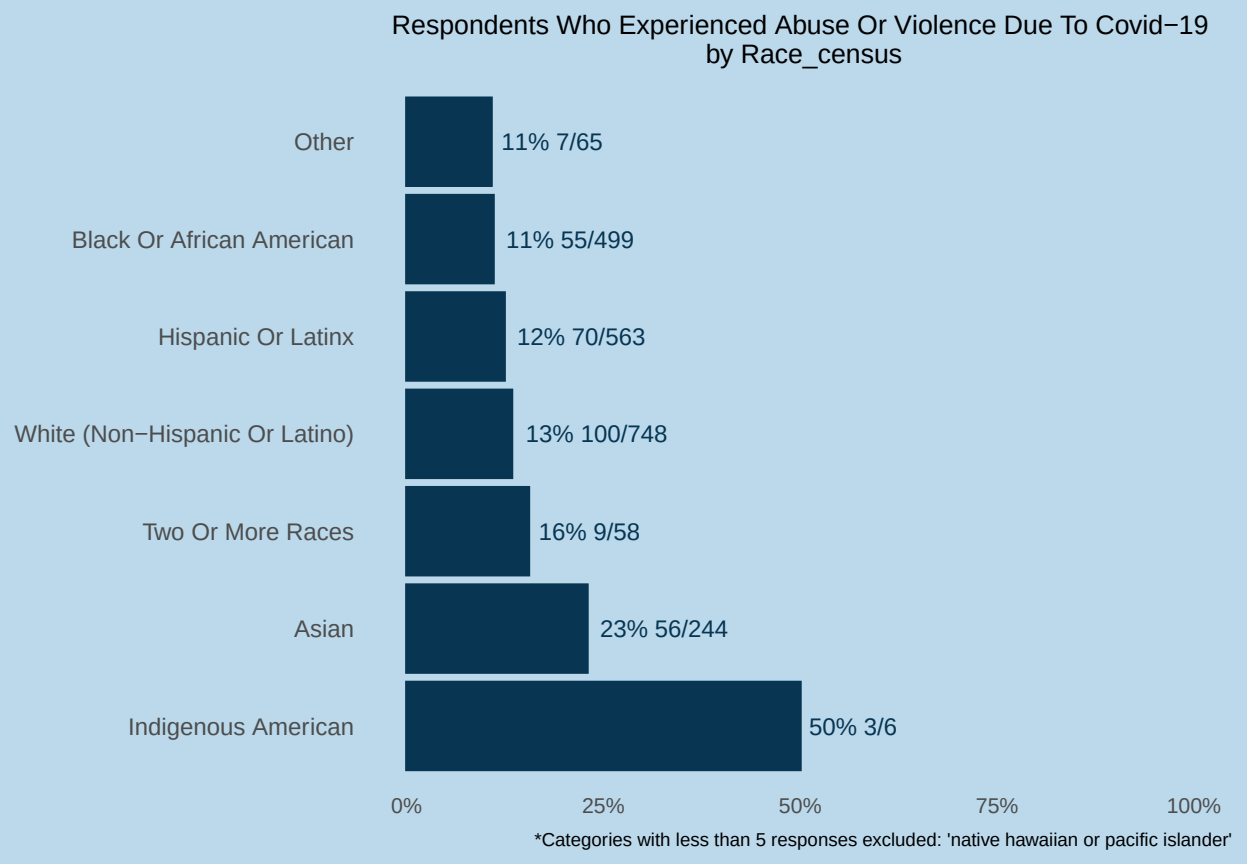


```
##
## $borough$p.values
## $borough$p.values$exp_ab_or_vi
##                staten island bronx manhattan queens brooklyn
## staten island             NA    NA        NA     NA       NA
## bronx                     NA    NA        NA     NA       NA
## manhattan                 NA    NA        NA     NA       NA
## queens                    NA    NA        NA     NA       NA
## brooklyn                  NA    NA        NA     NA       NA
##
##
##
## $gen
## $gen$plot
```



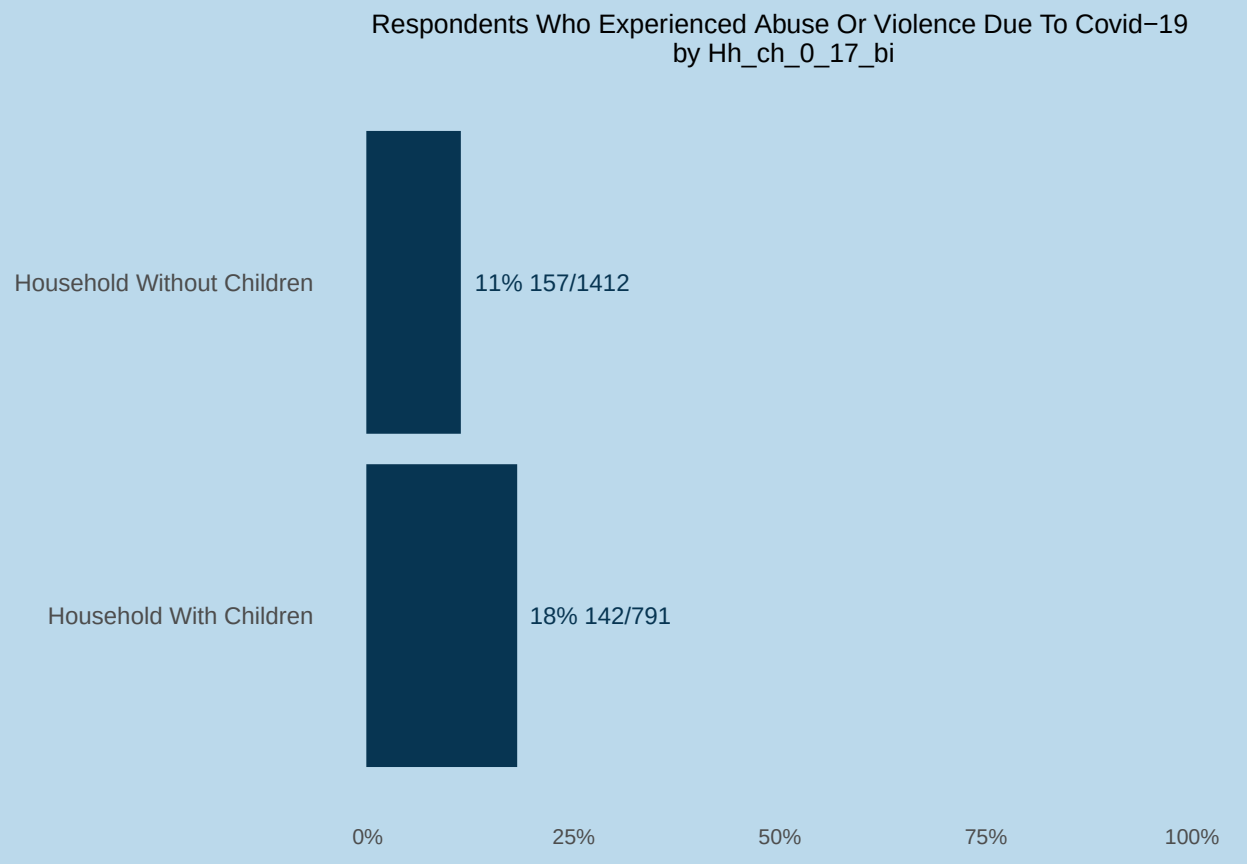

```
##
## $gen$p.values
## $gen$p.values$exp_ab_or_vi
##                   prefer not to say female male non-binary transgender
## prefer not to say                NA     NA   NA         NA          NA
## female                           NA     NA   NA         NA          NA
## male                             NA     NA   NA         NA          NA
## non-binary                       NA     NA   NA         NA          NA
## transgender                      NA     NA   NA         NA          NA
##
```

```
##
##
## $race_census
## $race_census$plot
```



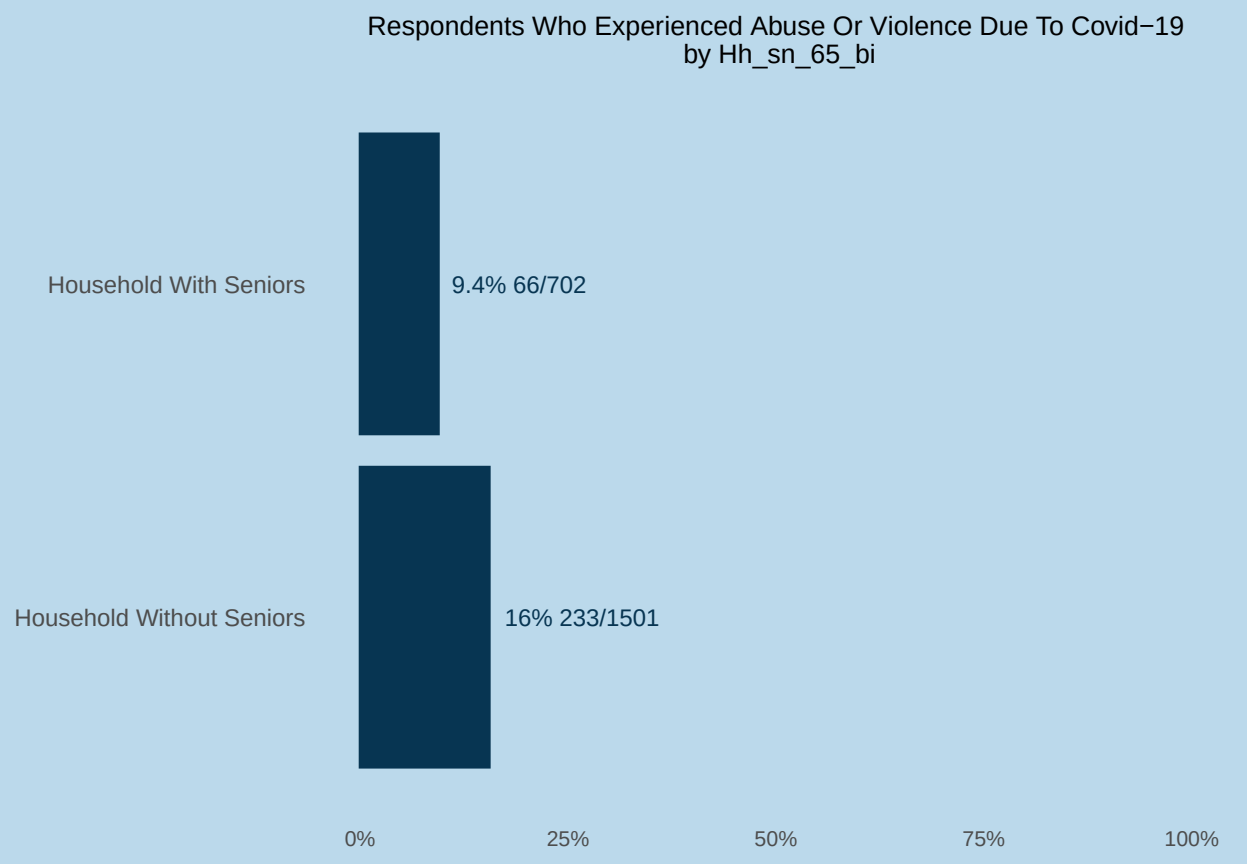

```
##
## $race_census$p.values
## $race_census$p.values$exp_ab_or_vi
##                                other black or african american
## other                             NA                        NA
## black or african american         NA                        NA
## hispanic or latinx                NA                        NA
## white (non-hispanic or latino)    NA                        NA
## two or more races                 NA                        NA
## asian                             NA                     3e-05
## Indigenous American               NA                        NA
##                                hispanic or latinx
## other                                      NA
## black or african american                  NA
## hispanic or latinx                         NA
## white (non-hispanic or latino)             NA
## two or more races                          NA
## asian                                 0.00024
## Indigenous American                        NA
##                                white (non-hispanic or latino) two or more races
```

```
## other                                                 NA                NA
## black or african american                             NA                NA
## hispanic or latinx                                    NA                NA
## white (non-hispanic or latino)                        NA                NA
## two or more races                                     NA                NA
## asian                                            0.00052                NA
## Indigenous American                                   NA                NA
##                                  asian Indigenous American
## other                               NA                  NA
## black or african american      0.00003                  NA
## hispanic or latinx             0.00024                  NA
## white (non-hispanic or latino) 0.00052                  NA
## two or more races                   NA                  NA
## asian                               NA                  NA
## Indigenous American                 NA                  NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```

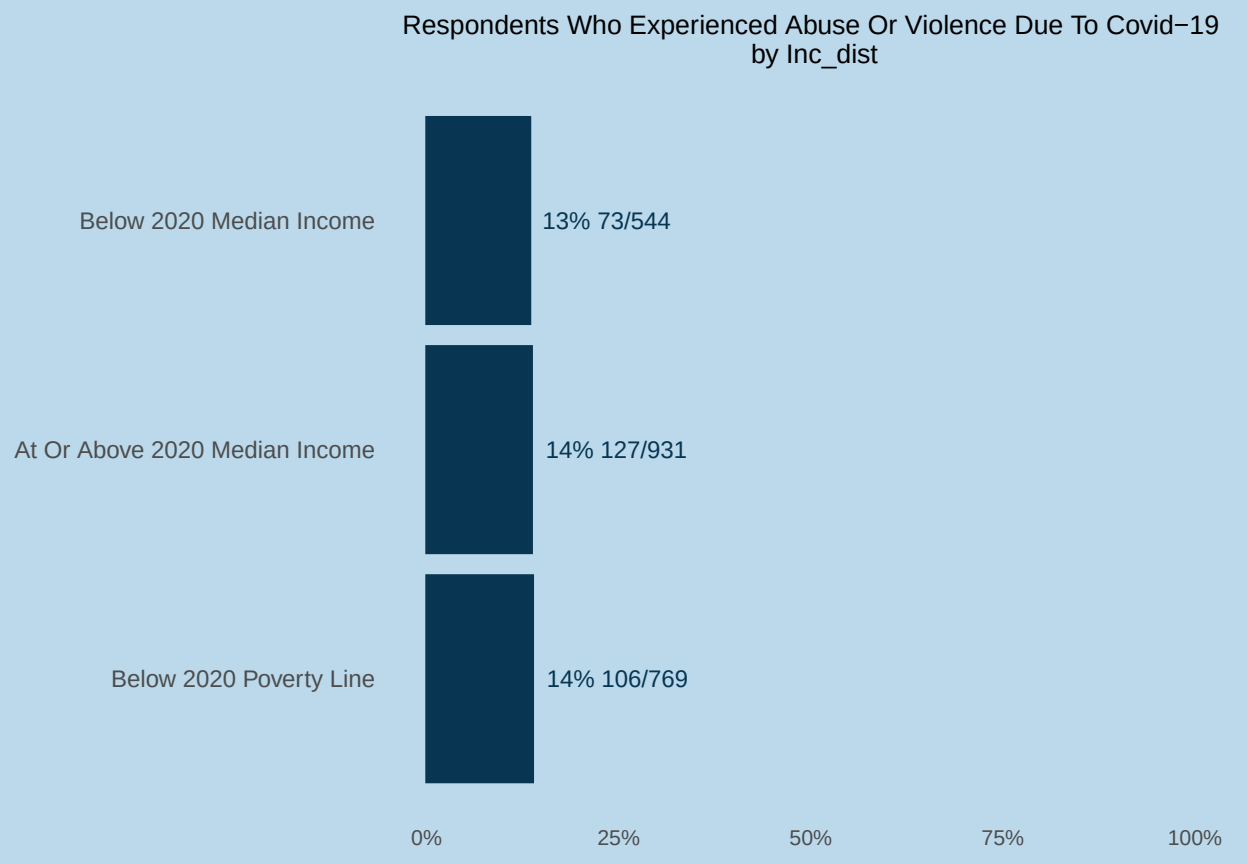



```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$exp_ab_or_vi
##                           household without children household with children
```

```
## household without children                        NA                 9.5e-06
## household with children                       9.5e-06                      NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$exp_ab_or_vi
##                            household with seniors household without seniors
## household with seniors                         NA                   0.00012
## household without seniors                 0.00012                        NA
##
##
##
## $inc_dist
## $inc_dist$plot
```




```
##
## $inc_dist$p.values
## $inc_dist$p.values$exp_ab_or_vi
##                                 below 2020 median income
## below 2020 median income                              NA
## at or above 2020 median income                        NA
## below 2020 poverty line                               NA
##                                 at or above 2020 median income
## below 2020 median income                                    NA
## at or above 2020 median income                              NA
## below 2020 poverty line                                     NA
##                                 below 2020 poverty line
## below 2020 median income                             NA
## at or above 2020 median income                       NA
## below 2020 poverty line                              NA
```

```
cat("Plots for borough, gen, and inc_dist do not show at least one statistically significant result")
```

```
## Plots for borough, gen, and inc_dist do not show at least one statistically significant result
```

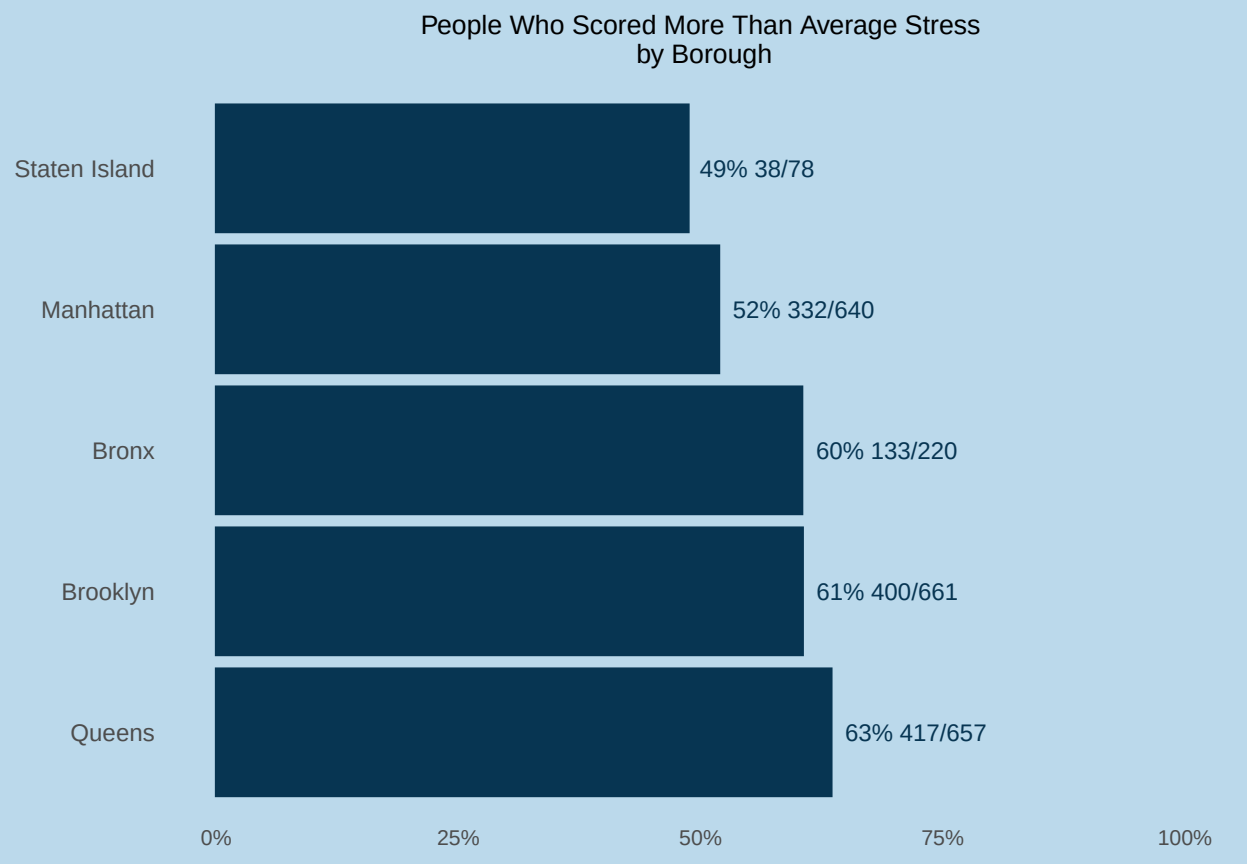
4.8)People who score more than average on the quantified mental health quantified questions [38]

1. Run categorical distribution over population

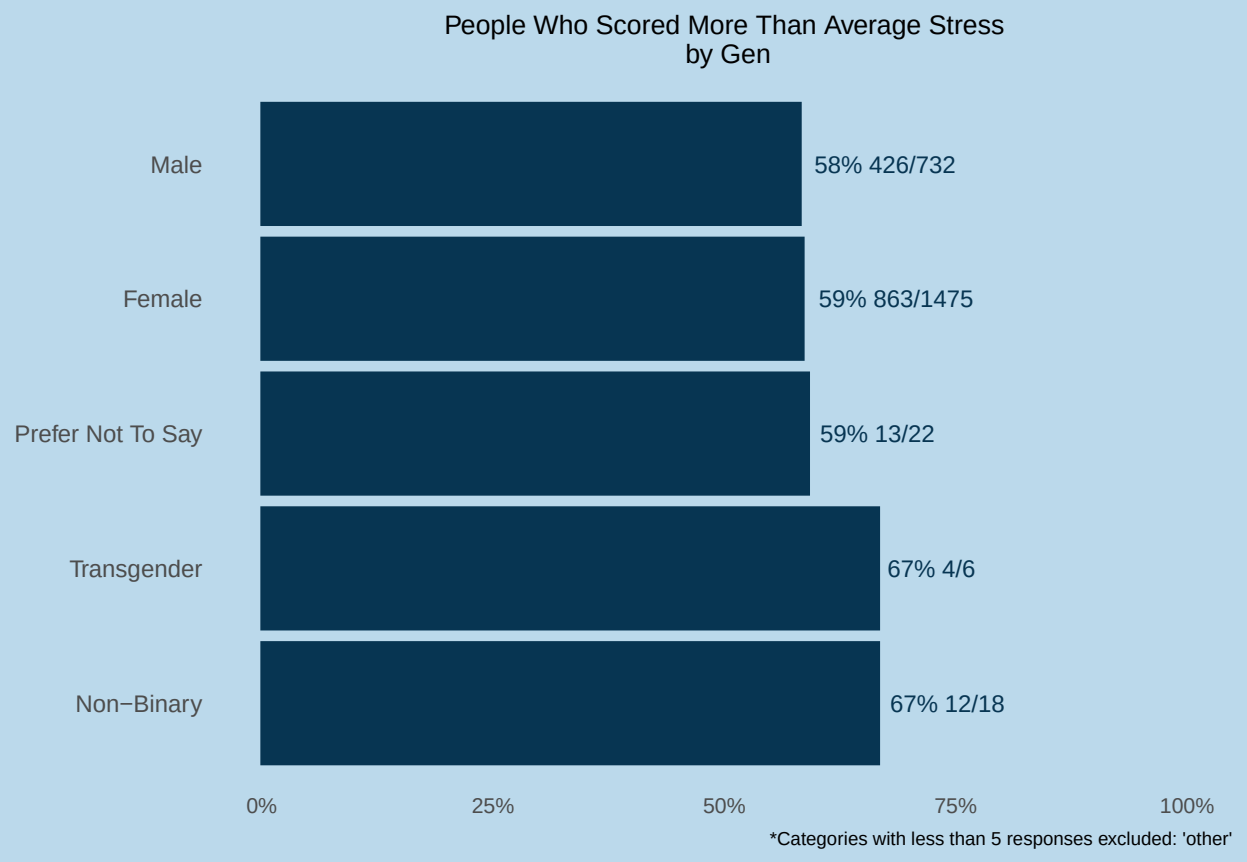
2. Run distribution by sub-demographics

```
make_plots(wrangled, demographics, "stress_bi", title = "People who scored more than average stress\n",
```

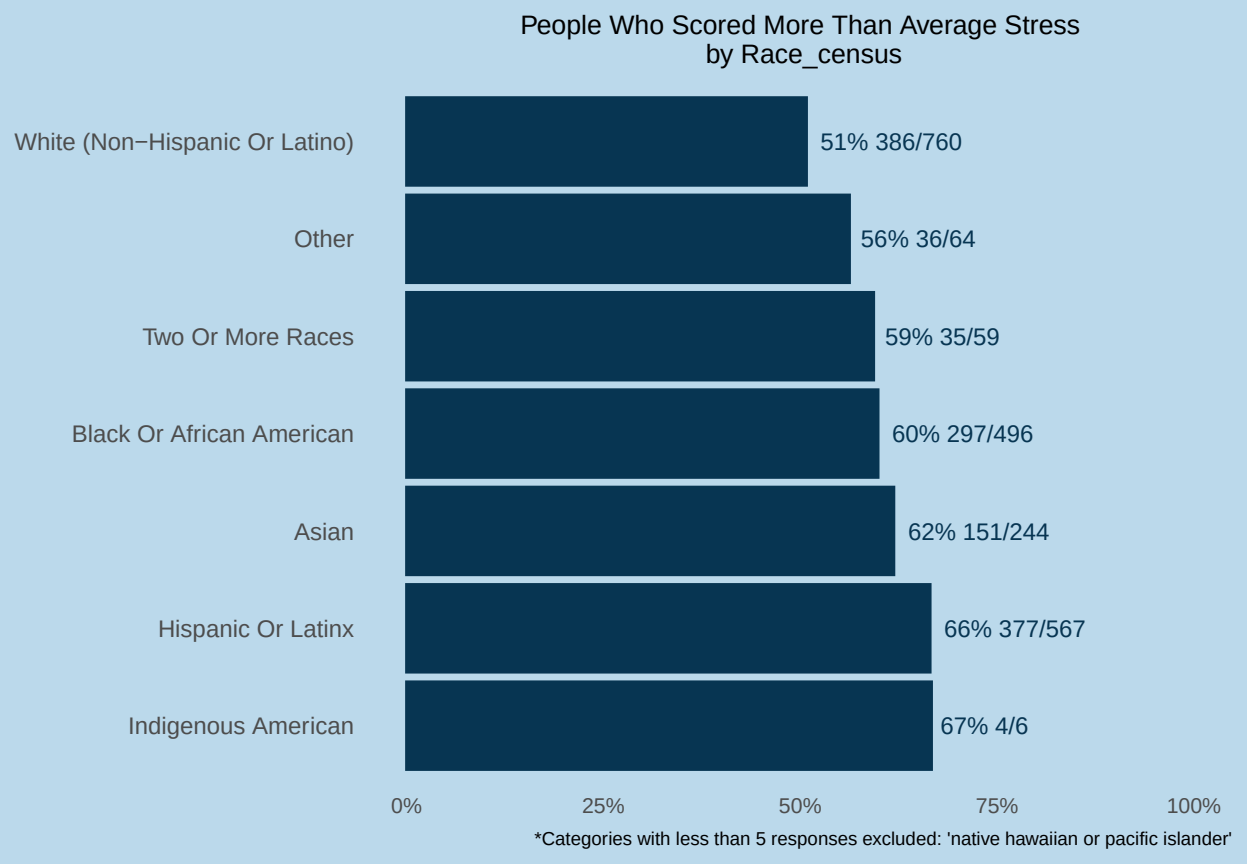
```
## $borough
## $borough$plot
```




```
##
## $borough$p.values
## $borough$p.values$stress_bi
##               staten island manhattan bronx brooklyn queens
## staten island            NA        NA    NA       NA     NA
## manhattan                NA        NA    NA    0.002  3e-05
## bronx                    NA        NA    NA       NA     NA
## brooklyn                 NA     2e-03    NA       NA     NA
## queens                   NA     3e-05    NA       NA     NA
##
##
##
## $gen
## $gen$plot
```

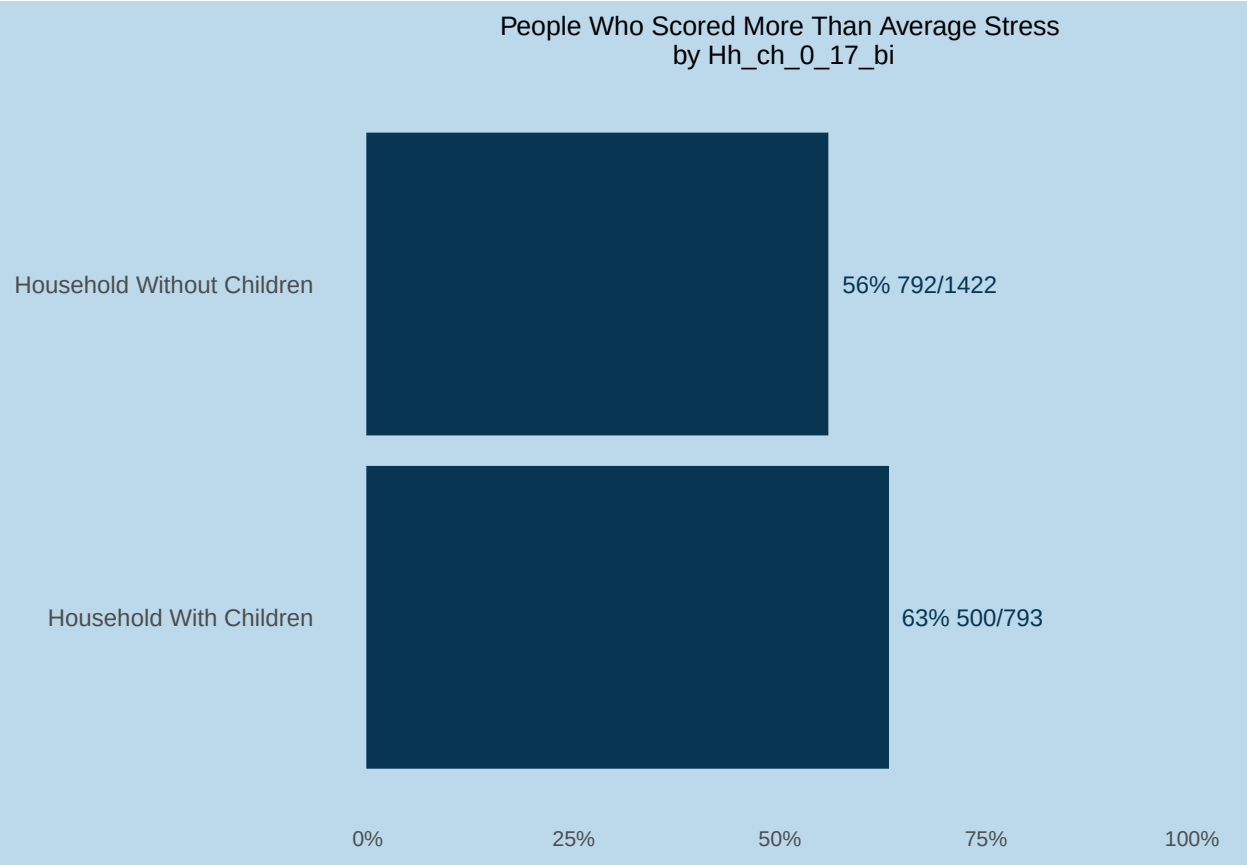



```
##
## $gen$p.values
## $gen$p.values$stress_bi
##                   male female prefer not to say non-binary transgender
## male                NA     NA                NA         NA          NA
## female              NA     NA                NA         NA          NA
## prefer not to say   NA     NA                NA         NA          NA
## non-binary          NA     NA                NA         NA          NA
## transgender         NA     NA                NA         NA          NA
##
##
##
## $race_census
## $race_census$plot
```

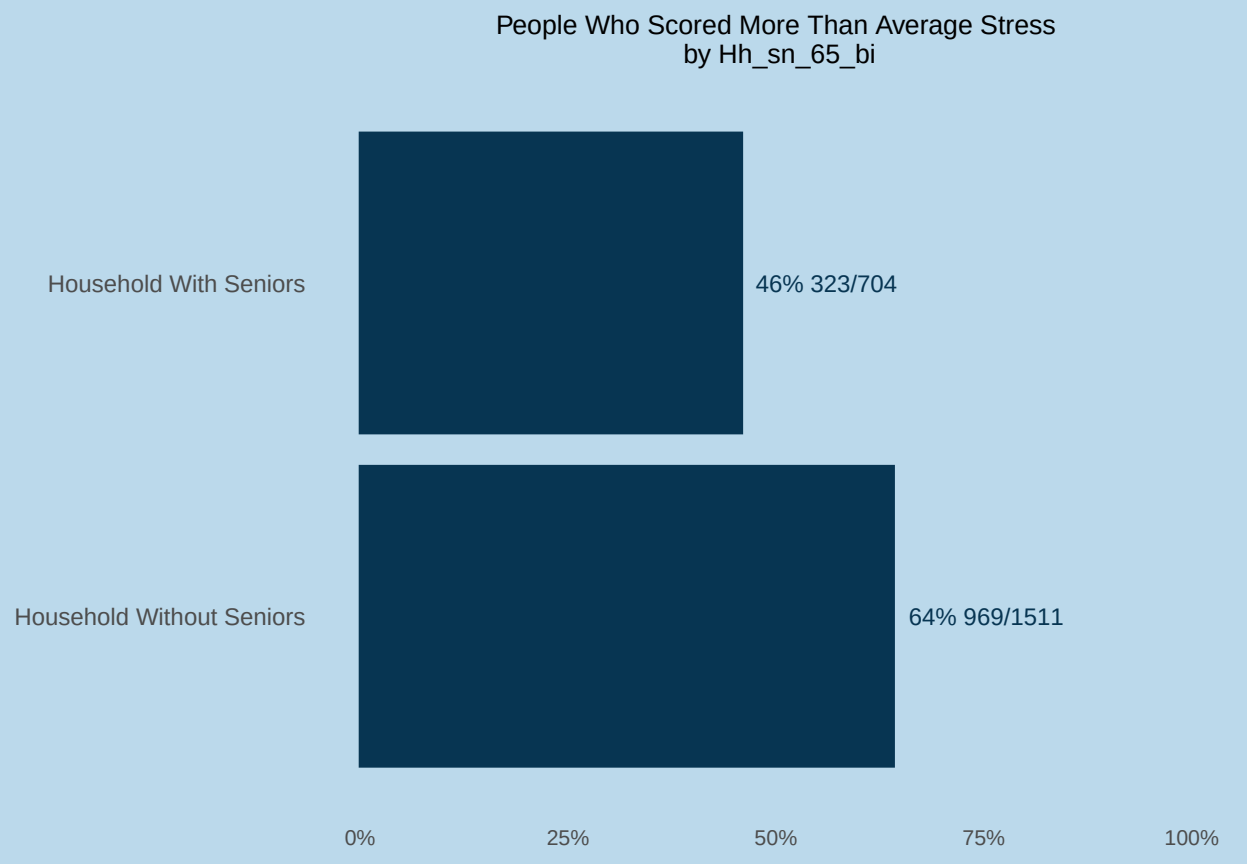



```
##
## $race_census$p.values
## $race_census$p.values$stress_bi
##                                 white (non-hispanic or latino) other
## white (non-hispanic or latino)                             NA    NA
## other                                                      NA    NA
## two or more races                                          NA    NA
## black or african american                              1.9e-03    NA
## asian                                                  3.2e-03    NA
## hispanic or latinx                                     1.5e-08    NA
## Indigenous American                                        NA    NA
##                                 two or more races black or african american
## white (non-hispanic or latino)                NA                     0.0019
## other                                         NA                         NA
## two or more races                             NA                         NA
## black or african american                     NA                         NA
## asian                                         NA                         NA
## hispanic or latinx                            NA                         NA
## Indigenous American                           NA                         NA
##                                  asian hispanic or latinx Indigenous American
## white (non-hispanic or latino) 0.0032           1.5e-08                   NA
## other                             NA                NA                   NA
## two or more races                 NA                NA                   NA
## black or african american         NA                NA                   NA
## asian                             NA                NA                   NA
## hispanic or latinx                NA                NA                   NA
```

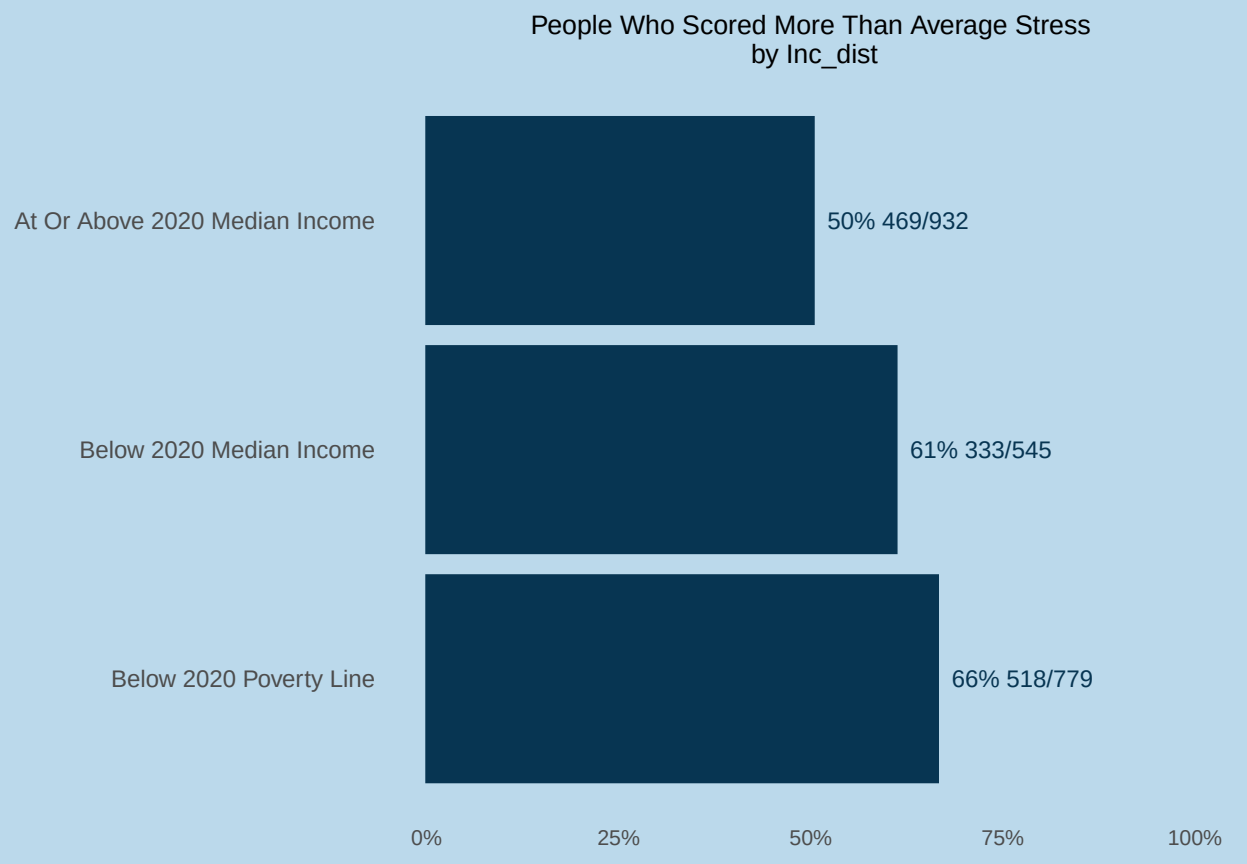
```
## Indigenous American                NA                  NA                  NA
##
##
##
## $hh_ch_0_17_bi
## $hh_ch_0_17_bi$plot
```




```
##
## $hh_ch_0_17_bi$p.values
## $hh_ch_0_17_bi$p.values$stress_bi
##                             household without children household with children
## household without children                         NA                   9e-04
## household with children                         9e-04                      NA
##
##
##
## $hh_sn_65_bi
## $hh_sn_65_bi$plot
```




```
##
## $hh_sn_65_bi$p.values
## $hh_sn_65_bi$p.values$stress_bi
##                            household with seniors household without seniors
## household with seniors                         NA                   7.3e-16
## household without seniors                 7.3e-16                        NA
##
##
##
## $inc_dist
## $inc_dist$plot
```




```
##
## $inc_dist$p.values
## $inc_dist$p.values$stress_bi
##                                 at or above 2020 median income
## at or above 2020 median income                              NA
## below 2020 median income                               7.5e-05
## below 2020 poverty line                                2.2e-11
##                                 below 2020 median income below 2020 poverty line
## at or above 2020 median income                  7.5e-05                  2.2e-11
## below 2020 median income                             NA                       NA
## below 2020 poverty line                              NA                       NA
```

```
cat("Plot for gen does not show at least one statistically signifcant result")
```

```
## Plot for gen does not show at least one statistically signifcant result
```

4.9 - 4.12

4.9) People who rated government response poorly were more likely to score higher than average on the mental health score.

1. Find proportion of population who rated government services below average
2. Find mental health score amongst people who rated government services below average as compared to those who rated government services above average.

4.10)People who are currently unemployed are more likely to score higher than average on the mental health score

1. Find respondents who are currently unemployed [15]

a. Find proportion of subset that scored higher than average on the mental health score [38]
b. Find proportion not in subset and compare (test unequal proportions)

4.11)People who have experienced abuse or violence are more likely to score higher than average on the mental health score

1. 1.Run binary distribution over population [36]

a. Yes = experienced verbal abuse or physical abuse
b. No = has not experienced any abuse or violence

2. Find respondents who have experienced violence or abuse

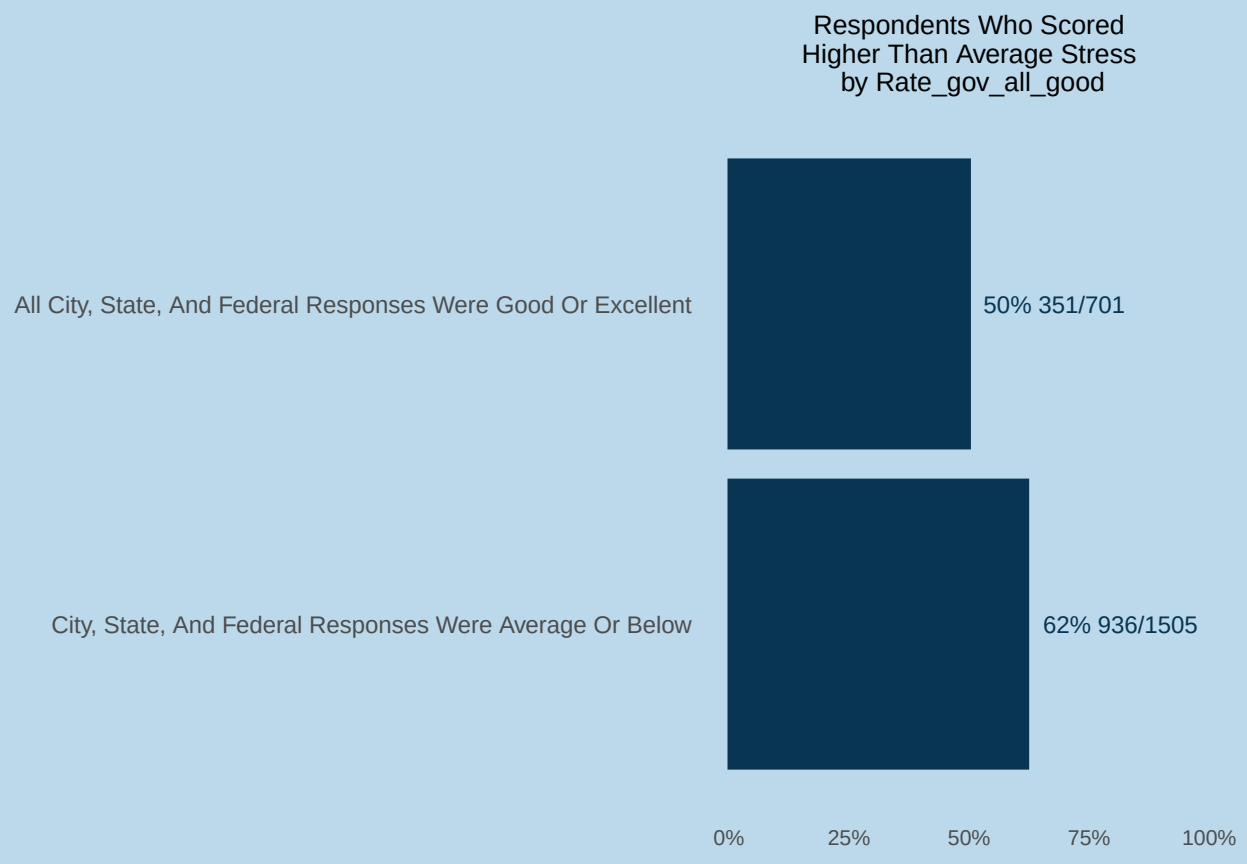
a. Find proportion of subset that scored higher than average on the mental health score [38]
b. Find proportion not in subset and compare (test unequal proportions)

4.12)People who have been discriminated against are more likely to score higher than average on the mental health score

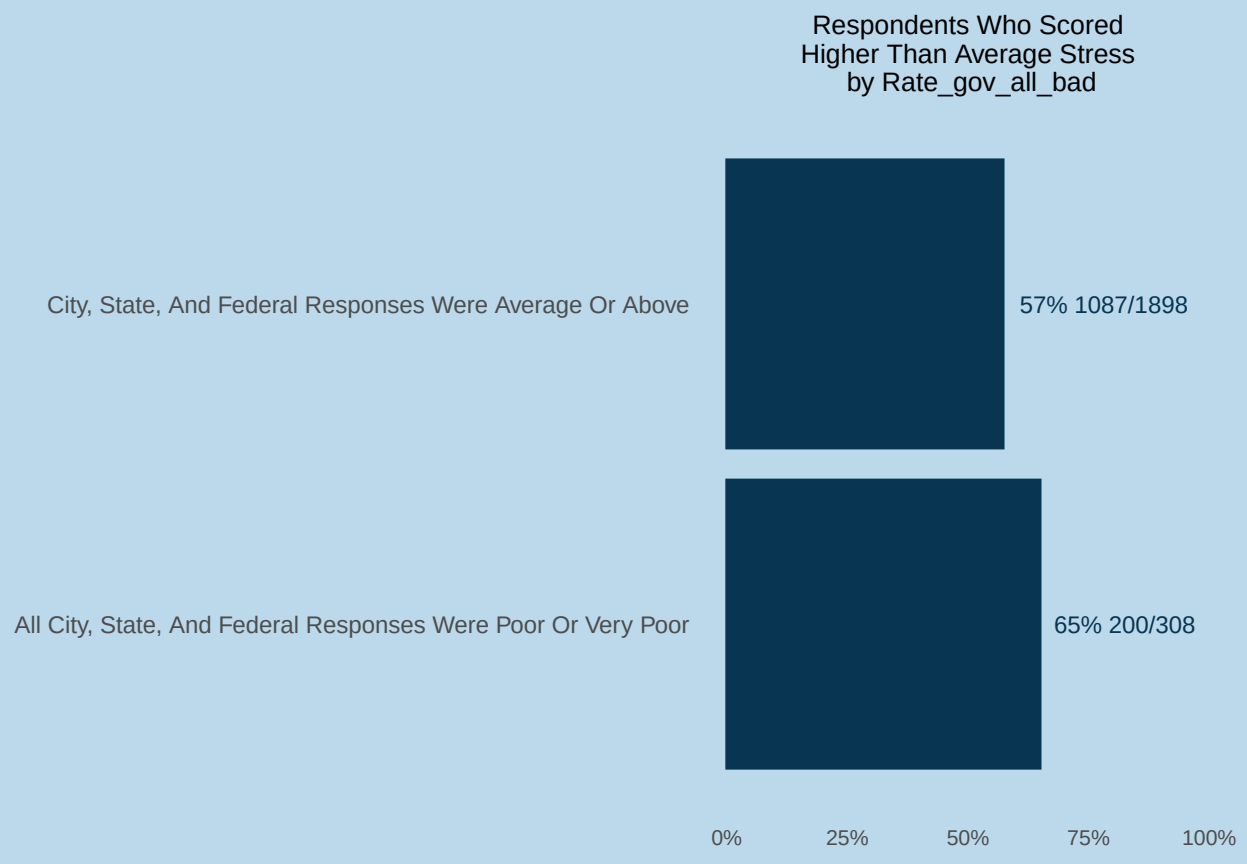
1.Find respondents who have been discriminated against [37] a. Find proportion of subset that scored higher than average on the mental health score [38] b. Find proportion not in subset and compare (test unequal proportions)

```
make_plots(wrangled,
           c(
             # 4.9
             "rate_gov_all_good", "rate_gov_all_bad",
             # 4.10
             "emp_after_un",
             # 4.11
             "exp_ab_or_vi",
             "exp_ab_and_vi",
             # 4.12
             "discrim_bi"),
           "stress_bi", title = "Respondents who scored\nhigher than average stress\n", show =TRUE)
```

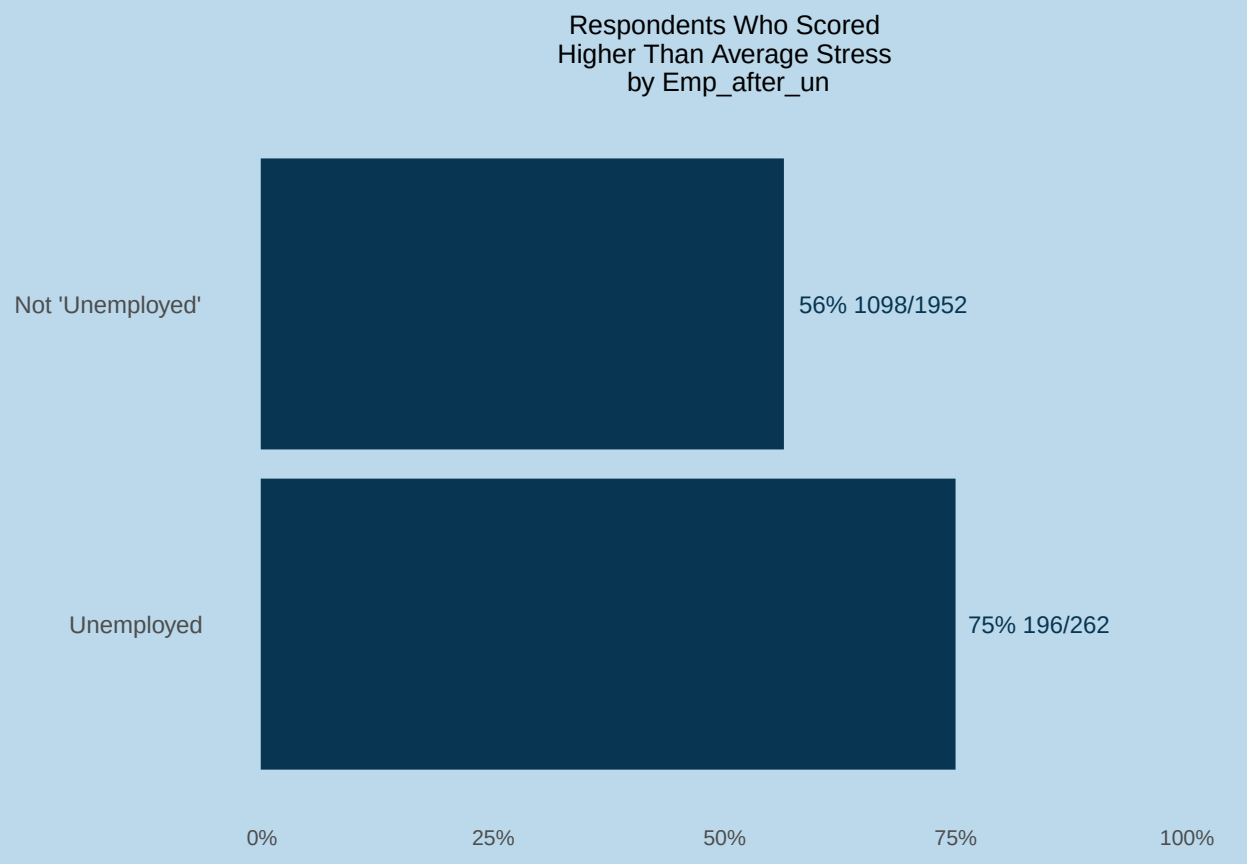
```
## $rate_gov_all_good
## $rate_gov_all_good$plot
```



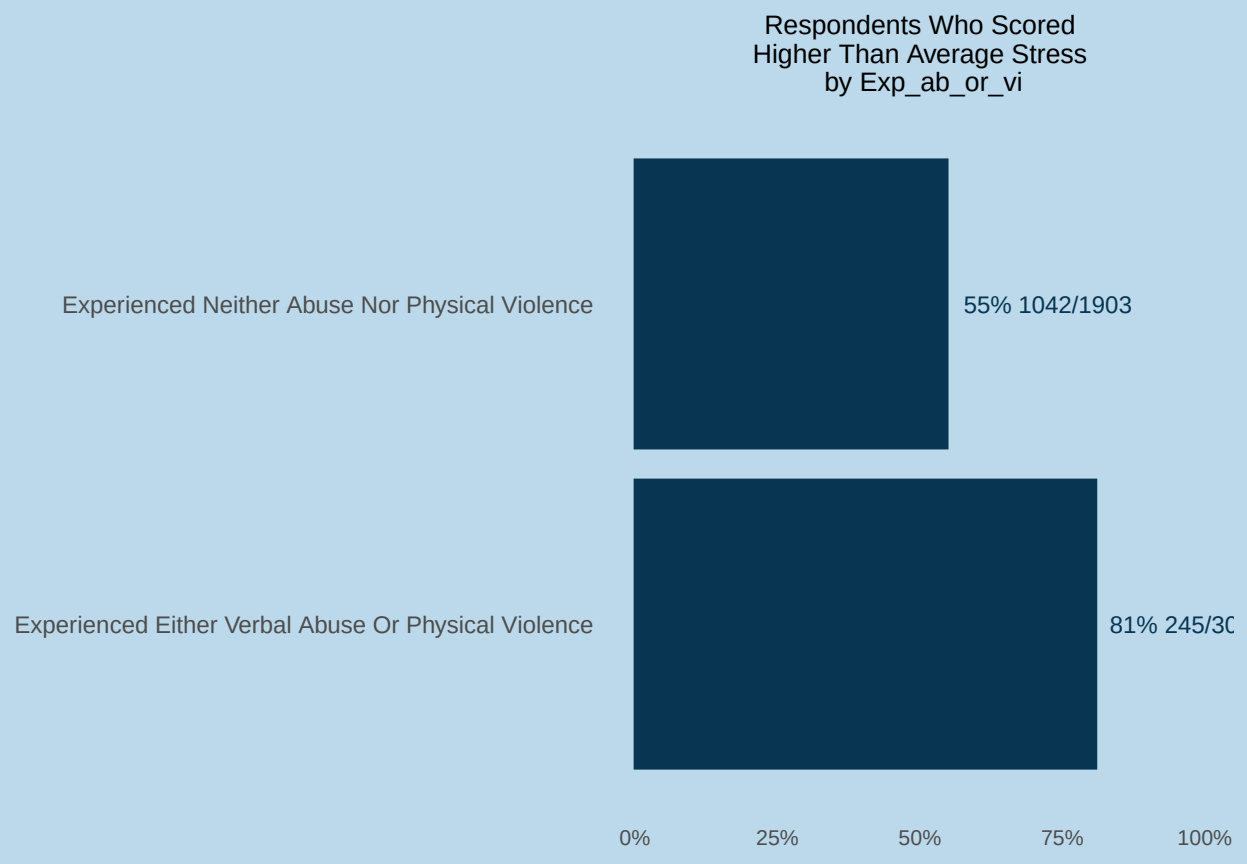

```
##
## $rate_gov_all_good$p.values
## $rate_gov_all_good$p.values$stress_bi
##                                                          all city, state, and federal responses
## all city, state, and federal responses were good or excellent
## city, state, and federal responses were average or below
##                                                          city, state, and federal responses were
## all city, state, and federal responses were good or excellent
## city, state, and federal responses were average or below
##
##
##
## $rate_gov_all_bad
## $rate_gov_all_bad$plot
```



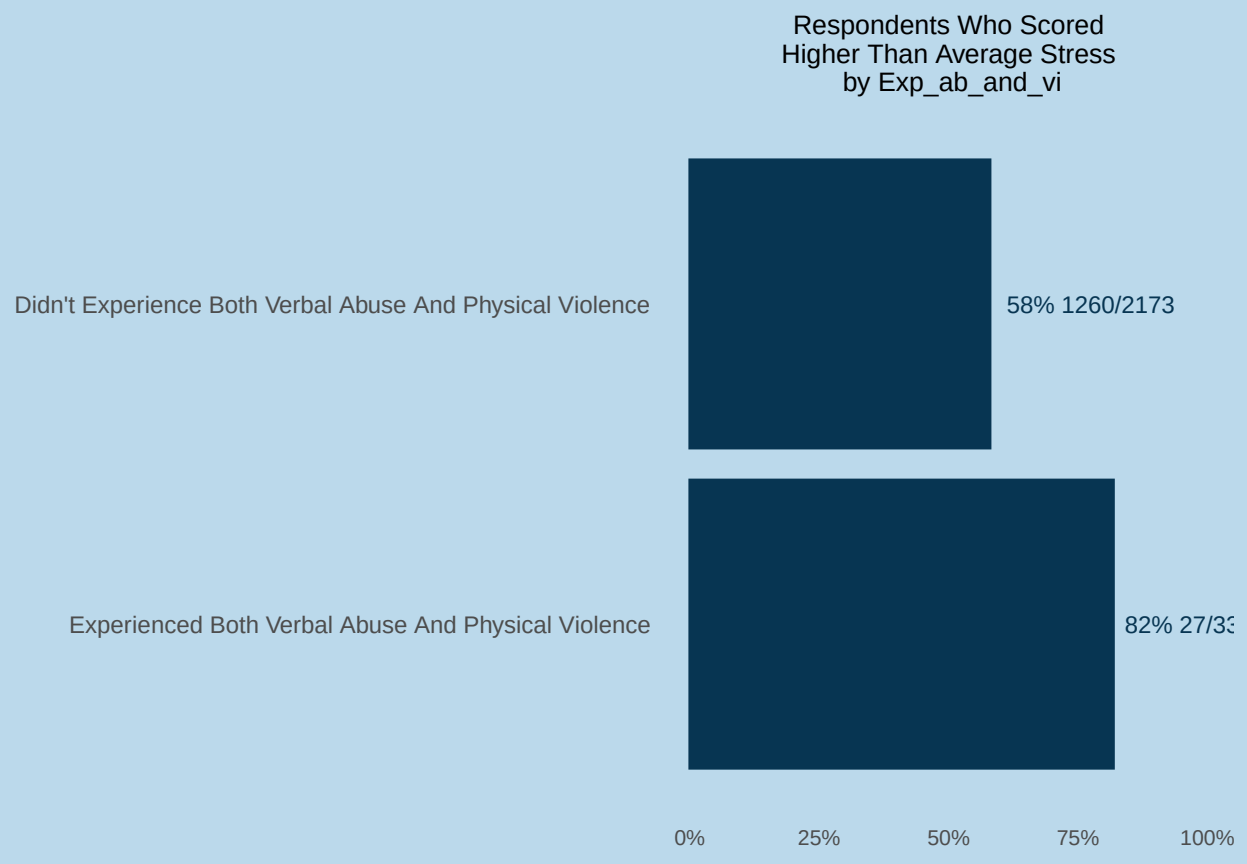

```
##
## $rate_gov_all_bad$p.values
## $rate_gov_all_bad$p.values$stress_bi
##                                                          city, state, and federal responses were
## city, state, and federal responses were average or above
## all city, state, and federal responses were poor or very poor
##                                                          all city, state, and federal responses
## city, state, and federal responses were average or above
## all city, state, and federal responses were poor or very poor
##
##
##
## $emp_after_un
## $emp_after_un$plot
```



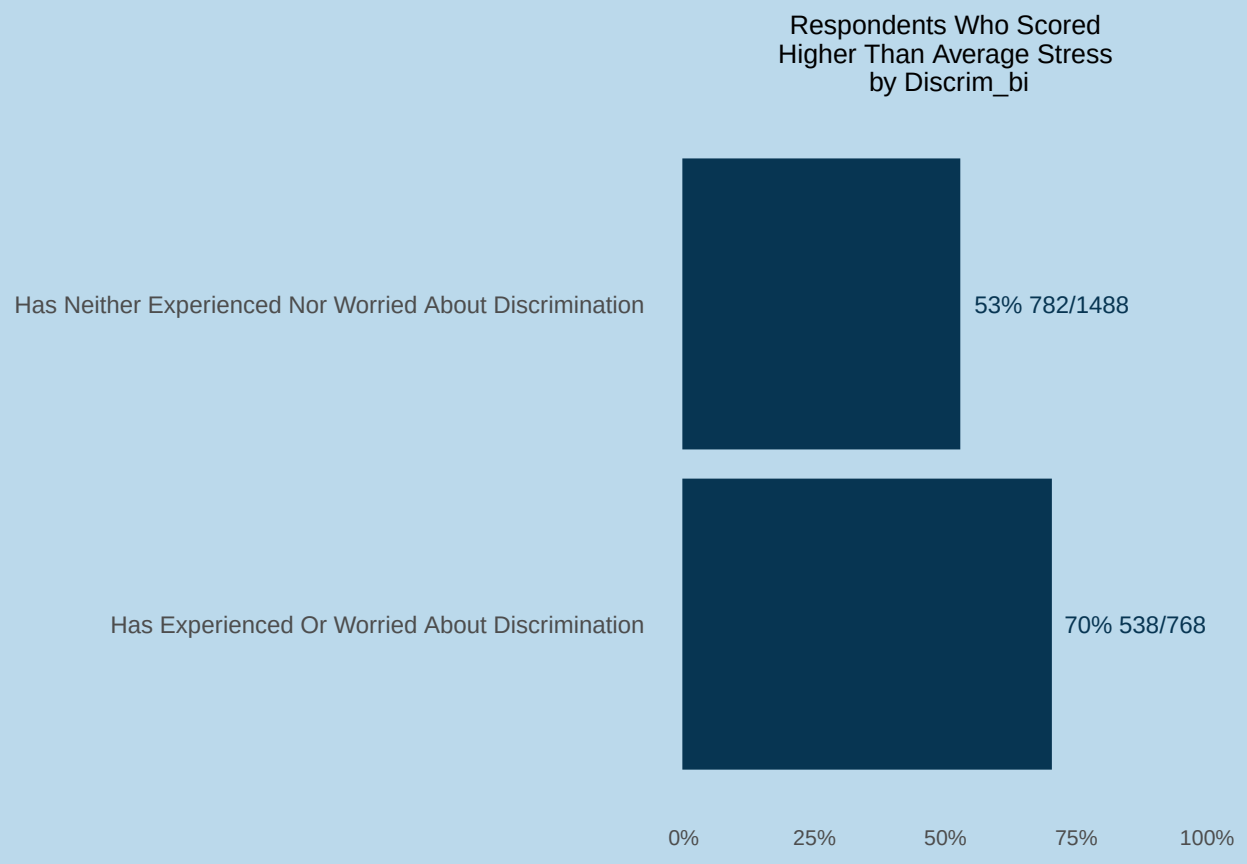

```
##
## $emp_after_un$p.values
## $emp_after_un$p.values$stress_bi
##                   not 'unemployed' unemployed
## not 'unemployed'                NA    1.5e-08
## unemployed                1.5e-08         NA
##
##
##
## $exp_ab_or_vi
## $exp_ab_or_vi$plot
```




```
##
## $exp_ab_or_vi$p.values
## $exp_ab_or_vi$p.values$stress_bi
##                                                 experienced neither abuse nor physical violence
## experienced neither abuse nor physical violence                                              NA
## experienced either verbal abuse or physical violence                                    1.9e-17
##                                                 experienced either verbal abuse or physical viol
## experienced neither abuse nor physical violence                                              1.9
## experienced either verbal abuse or physical violence
##
##
##
## $exp_ab_and_vi
## $exp_ab_and_vi$plot
```




```
##
## $exp_ab_and_vi$p.values
## $exp_ab_and_vi$p.values$stress_bi
##                                                          didn’t experience both verbal abuse and phy
## didn’t experience both verbal abuse and physical violence
## experienced both verbal abuse and physical violence
##                                                          experienced both verbal abuse and physical
## didn’t experience both verbal abuse and physical violence
## experienced both verbal abuse and physical violence
##
##
##
## $discrim_bi
## $discrim_bi$plot
```




```
##
## $discrim_bi$p.values
## $discrim_bi$p.values$stress_bi
##                                                    has neither experienced nor worried about di
## has neither experienced nor worried about discrimination
## has experienced or worried about discrimination
##                                                    has experienced or worried about discrimina
## has neither experienced nor worried about discrimination                                    1.9
## has experienced or worried about discrimination
```

```
cat("Plots for rate_gov_all_bad and exp_ab_and_vi are not showing at least one statistically significant
```

```
## Plots for rate_gov_all_bad and exp_ab_and_vi are not showing at least one statistically significant
```

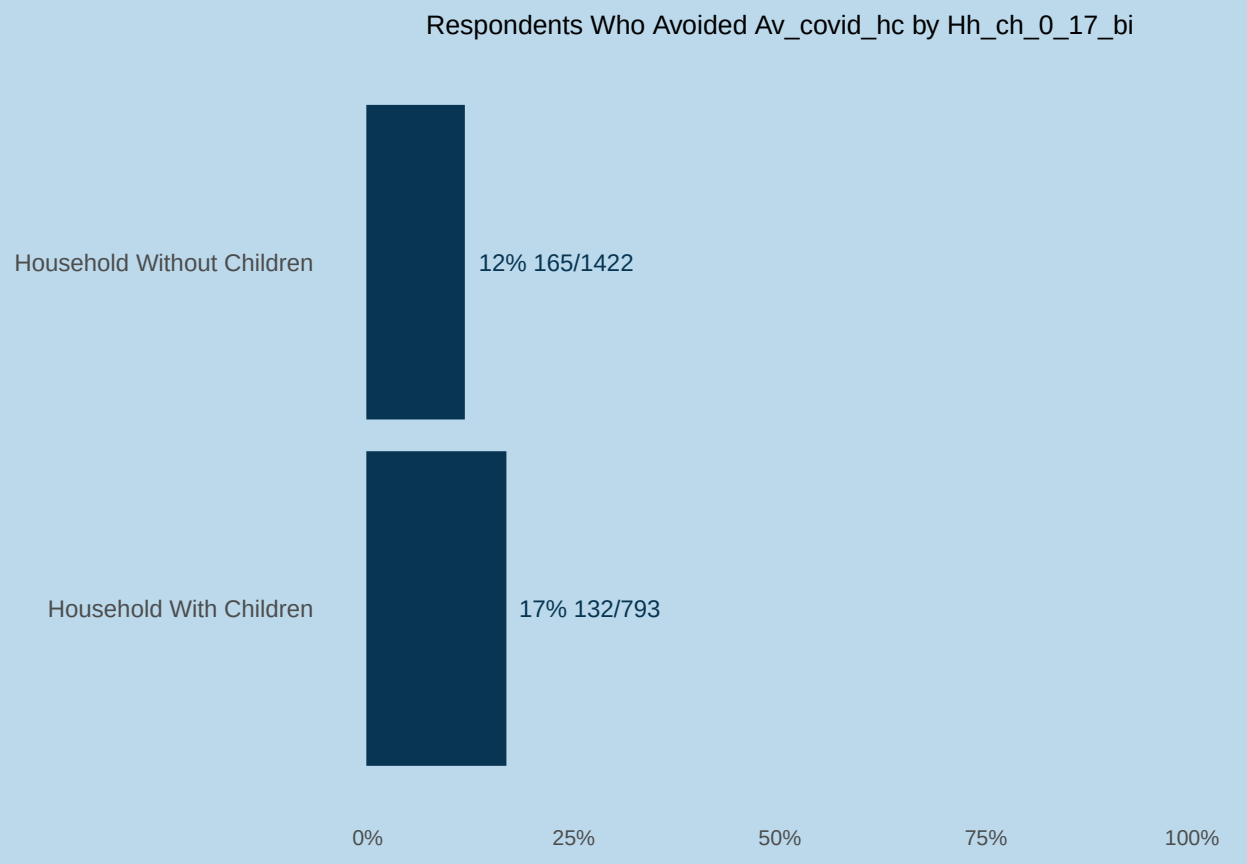
4.13) Run distribution over each activity which has been avoided because of Covid-19

1. Find respondents who avoided any activity because of Covid-19
2. Run sub demographic distribution over each activity

```
av_covid <- wrangled %>% select(starts_with("av_covid_") & !ends_with("text")) %>% colnames
```

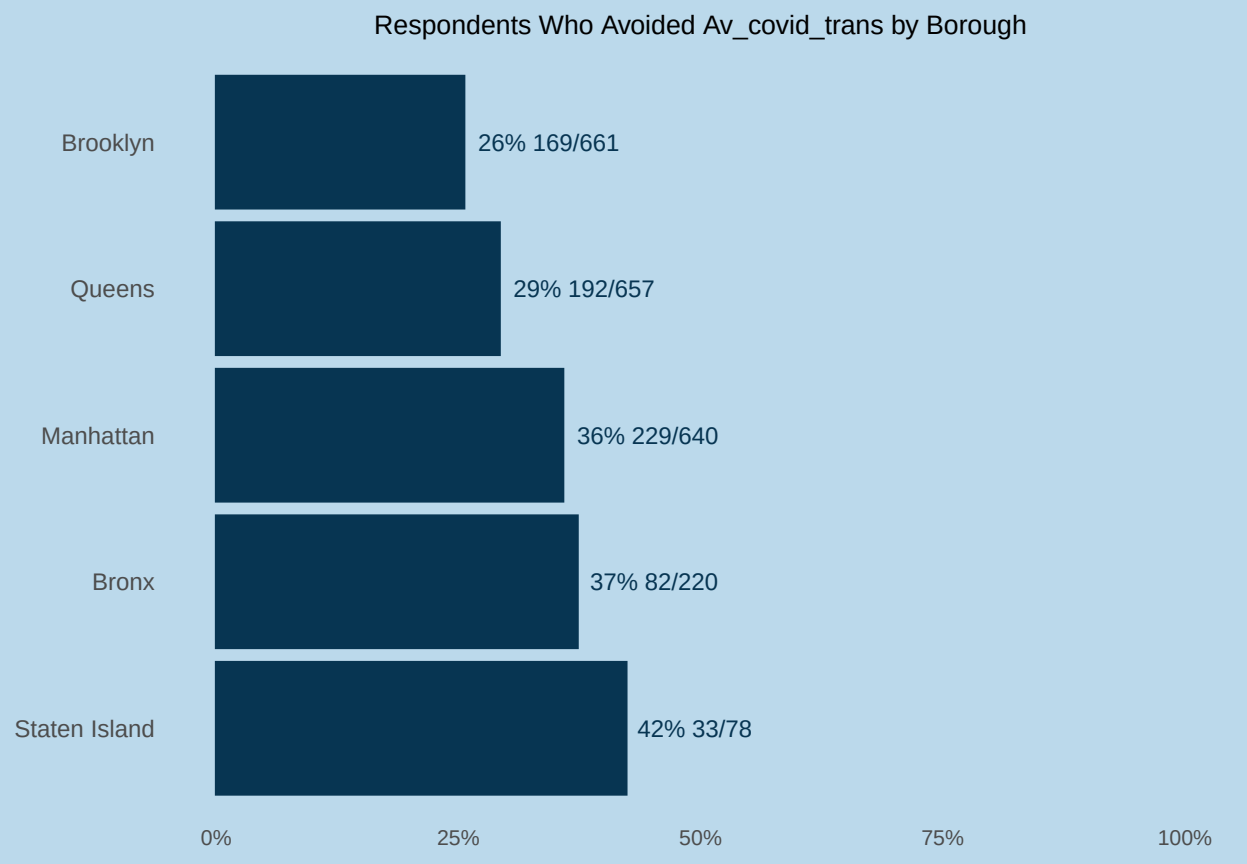
```
lapply(av_covid, function(var) {
  make_plots(wrangled, demographics, var, title = glue::glue("Respondents who avoided {var}"))
})
```

```
## [[1]]
## [[1]]$borough
## NULL
##
## [[1]]$gen
## NULL
##
## [[1]]$race_census
## NULL
##
## [[1]]$hh_ch_0_17_bi
## [[1]]$hh_ch_0_17_bi$plot
```

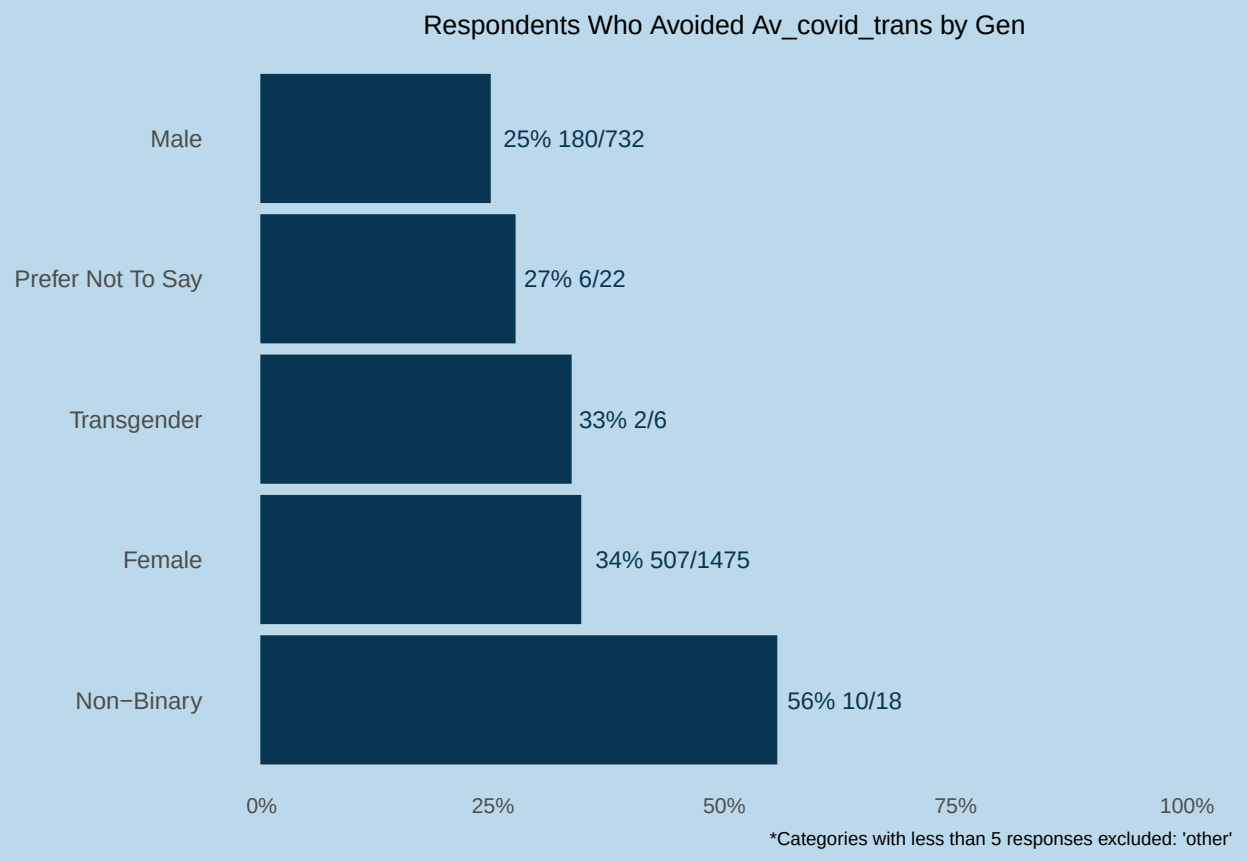



```
##
## [[1]]$hh_ch_0_17_bi$p.values
## [[1]]$hh_ch_0_17_bi$p.values$av_covid_hc
##                             household without children household with children
## household without children                          NA                 0.0011
## household with children                          0.0011                     NA
##
```

```
##
##
## [[1]]$hh_sn_65_bi
## NULL
##
## [[1]]$inc_dist
## NULL
##
##
## [[2]]
## [[2]]$borough
## NULL
##
## [[2]]$gen
## NULL
##
## [[2]]$race_census
## NULL
##
## [[2]]$hh_ch_0_17_bi
## NULL
##
## [[2]]$hh_sn_65_bi
## NULL
##
## [[2]]$inc_dist
## NULL
##
##
## [[3]]
## [[3]]$borough
## [[3]]$borough$plot
```

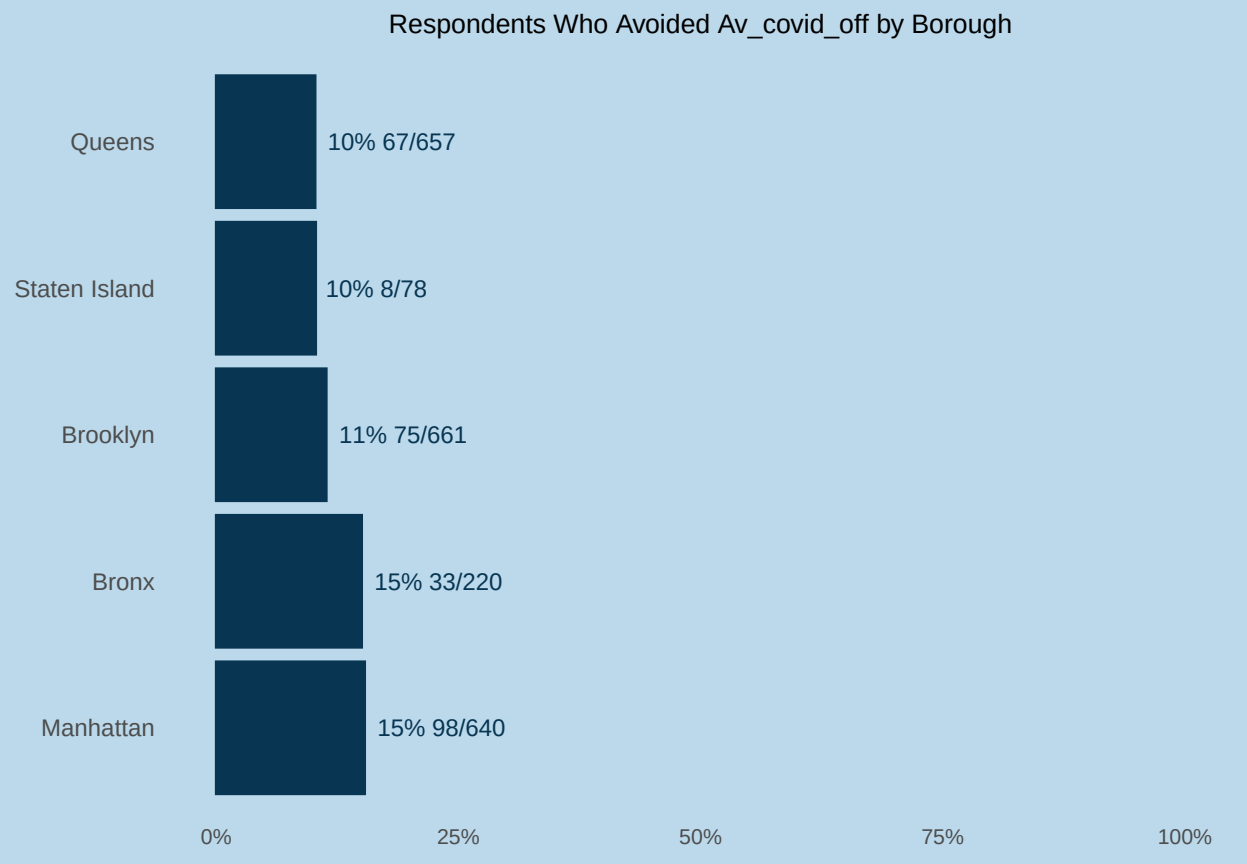



```
##
## [[3]]$borough$p.values
## [[3]]$borough$p.values$av_covid_trans
##               brooklyn queens manhattan  bronx staten island
## brooklyn            NA     NA   8.3e-05 0.0012        0.0027
## queens              NA     NA        NA     NA            NA
## manhattan      8.3e-05     NA        NA     NA            NA
## bronx          1.2e-03     NA        NA     NA            NA
## staten island  2.7e-03     NA        NA     NA            NA
##
##
##
## [[3]]$gen
## [[3]]$gen$plot
```



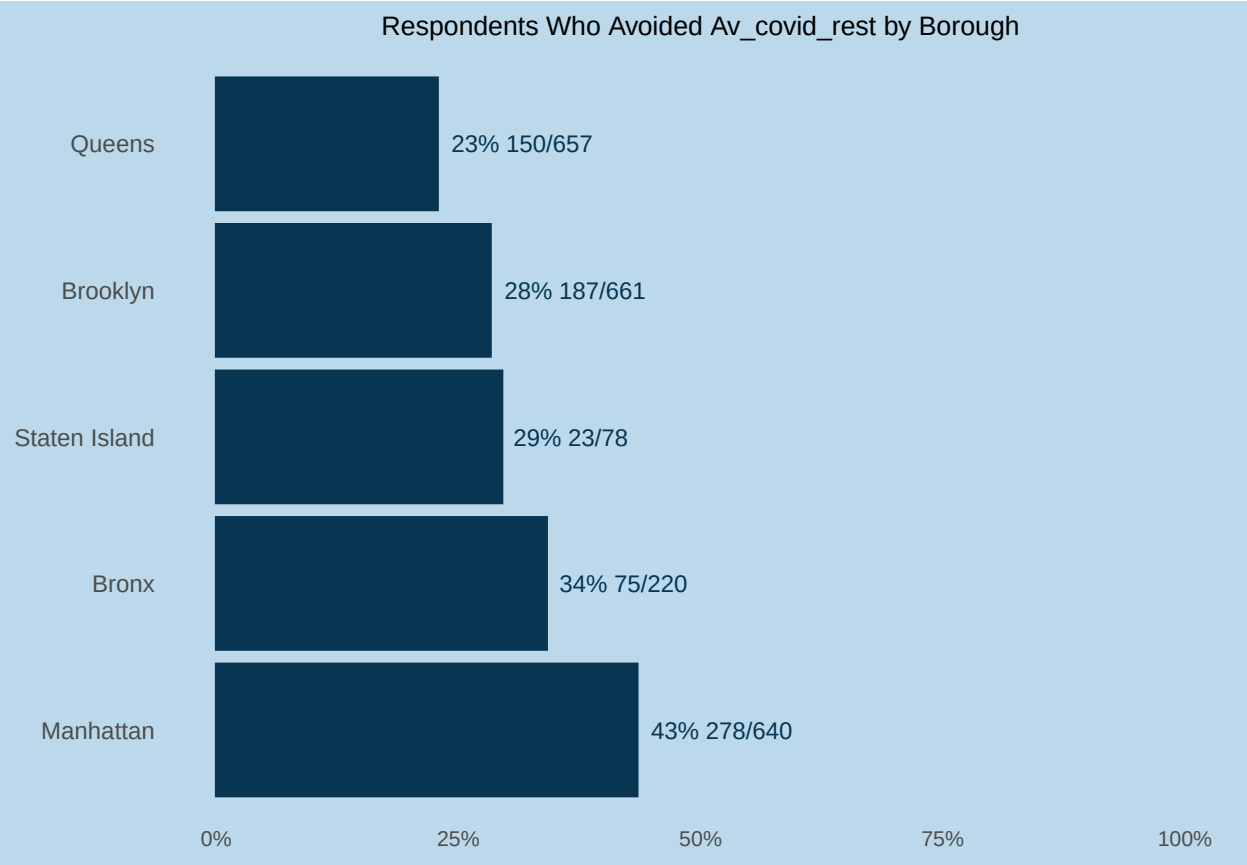

```
##
## [[3]]$gen$p.values
## [[3]]$gen$p.values$av_covid_trans
##                      male prefer not to say transgender  female non-binary
## male                   NA                NA          NA 3.8e-06         NA
## prefer not to say      NA                NA          NA      NA         NA
## transgender            NA                NA          NA      NA         NA
## female            3.8e-06                NA          NA      NA         NA
## non-binary             NA                NA          NA      NA         NA
##
##
##
## [[3]]$race_census
## NULL
##
## [[3]]$hh_ch_0_17_bi
## NULL
##
## [[3]]$hh_sn_65_bi
## NULL
##
## [[3]]$inc_dist
## NULL
##
##
## [[4]]
```

```
## [[4]]$borough
## [[4]]$borough$plot
```

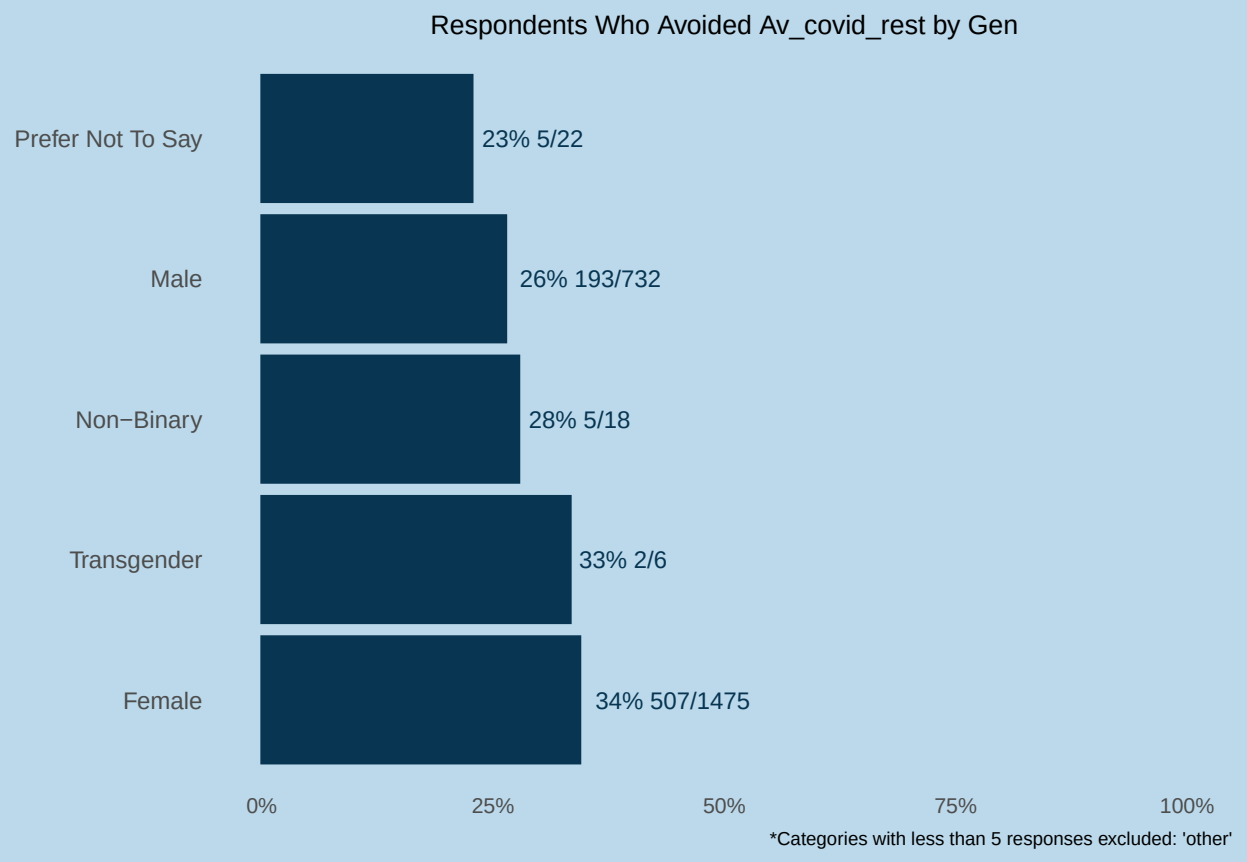



```
##
## [[4]]$borough$p.values
## [[4]]$borough$p.values$av_covid_off
##               queens staten island brooklyn bronx manhattan
## queens            NA            NA       NA    NA    0.0074
## staten island     NA            NA       NA    NA        NA
## brooklyn          NA            NA       NA    NA        NA
## bronx             NA            NA       NA    NA        NA
## manhattan     0.0074            NA       NA    NA        NA
##
##
##
## [[4]]$gen
## NULL
##
## [[4]]$race_census
## NULL
##
## [[4]]$hh_ch_0_17_bi
## NULL
##
## [[4]]$hh_sn_65_bi
```

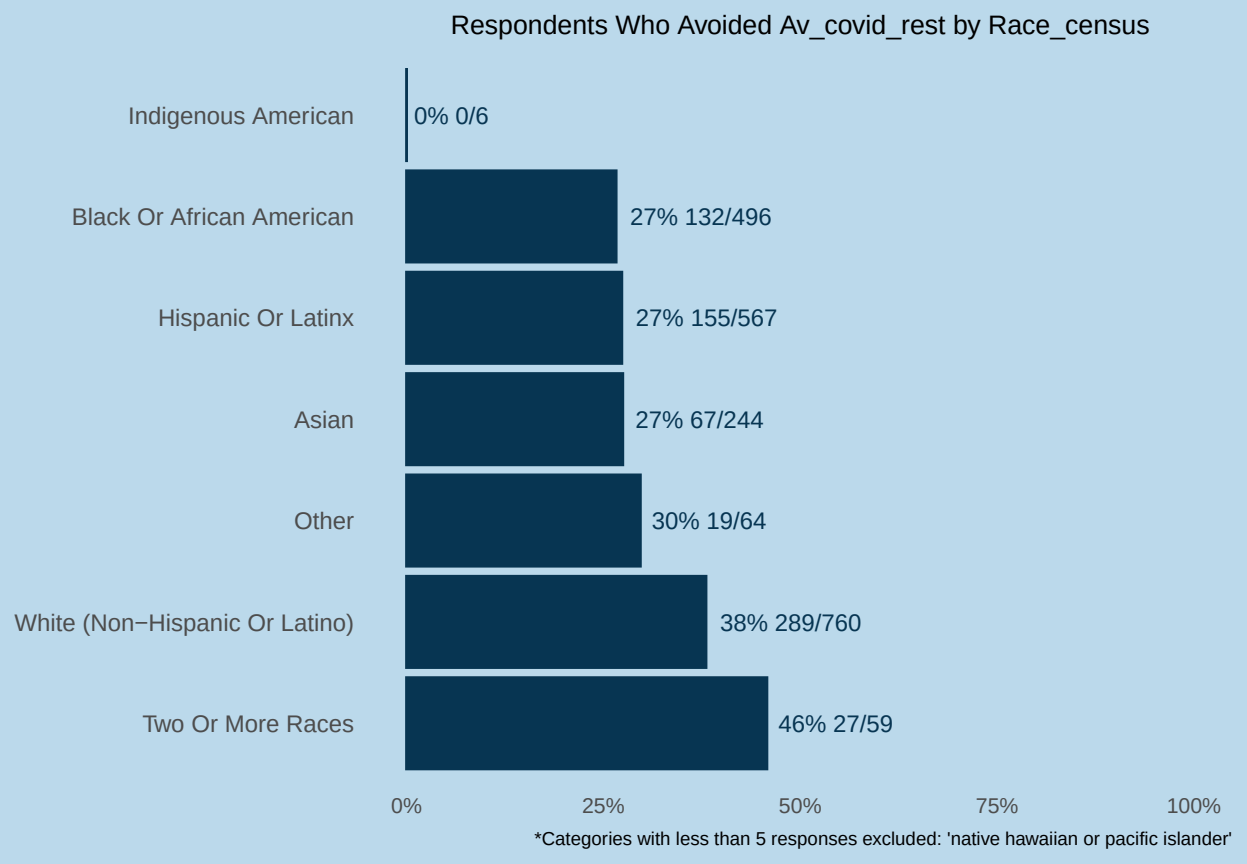
```
## NULL
##
## [[4]]$inc_dist
## NULL
##
##
## [[5]]
## [[5]]$borough
## [[5]]$borough$plot
```




```
##
## [[5]]$borough$p.values
## [[5]]$borough$p.values$av_covid_rest
##                queens brooklyn staten island  bronx manhattan
## queens             NA       NA            NA 0.0013   4.8e-15
## brooklyn           NA       NA            NA     NA   1.7e-08
## staten island      NA       NA            NA     NA        NA
## bronx         1.3e-03       NA            NA     NA        NA
## manhattan     4.8e-15  1.7e-08            NA     NA        NA
##
##
##
## [[5]]$gen
## [[5]]$gen$plot
```

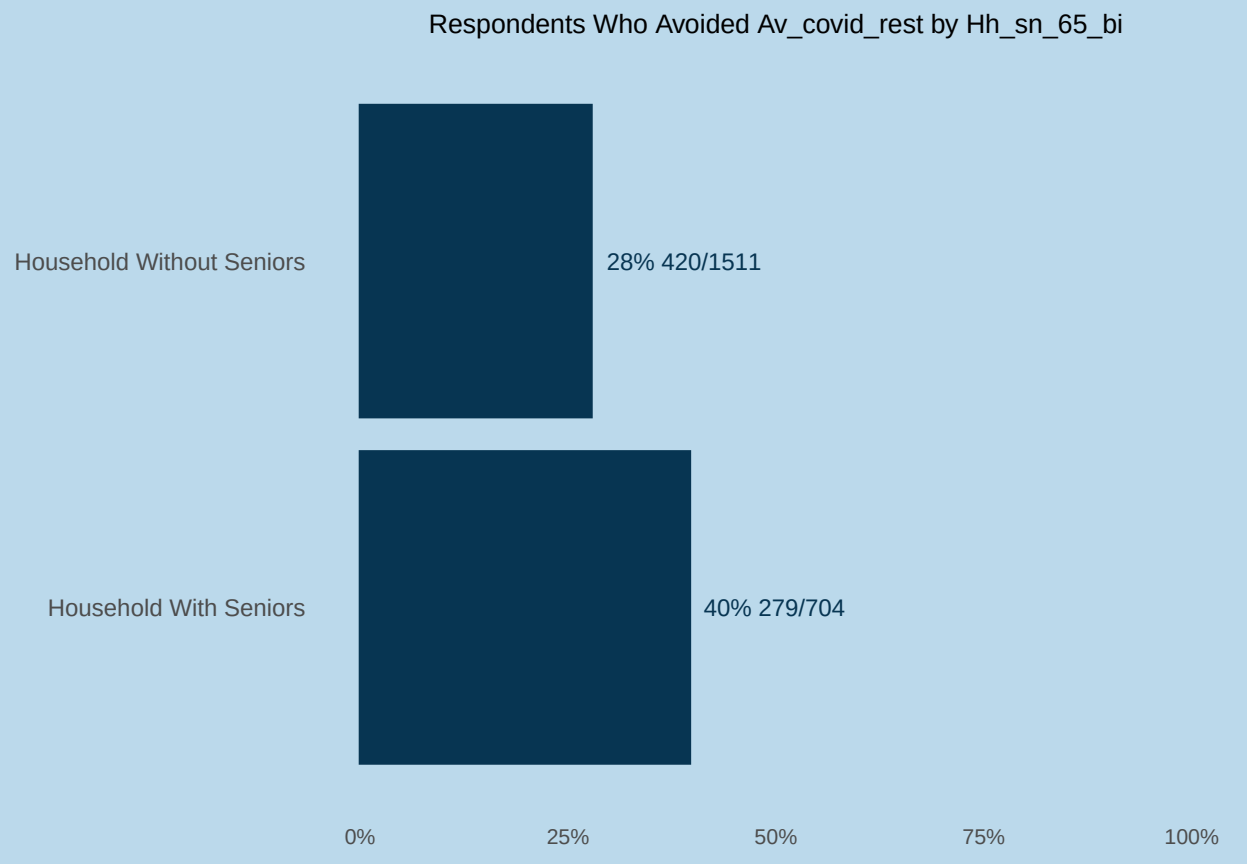



```
##
## [[5]]$gen$p.values
## [[5]]$gen$p.values$av_covid_rest
##                   prefer not to say    male non-binary transgender  female
## prefer not to say                NA      NA         NA           NA      NA
## male                             NA      NA         NA           NA 0.00017
## non-binary                       NA      NA         NA           NA      NA
## transgender                      NA      NA         NA           NA      NA
## female                           NA 0.00017         NA           NA      NA
##
##
##
## [[5]]$race_census
## [[5]]$race_census$plot
```

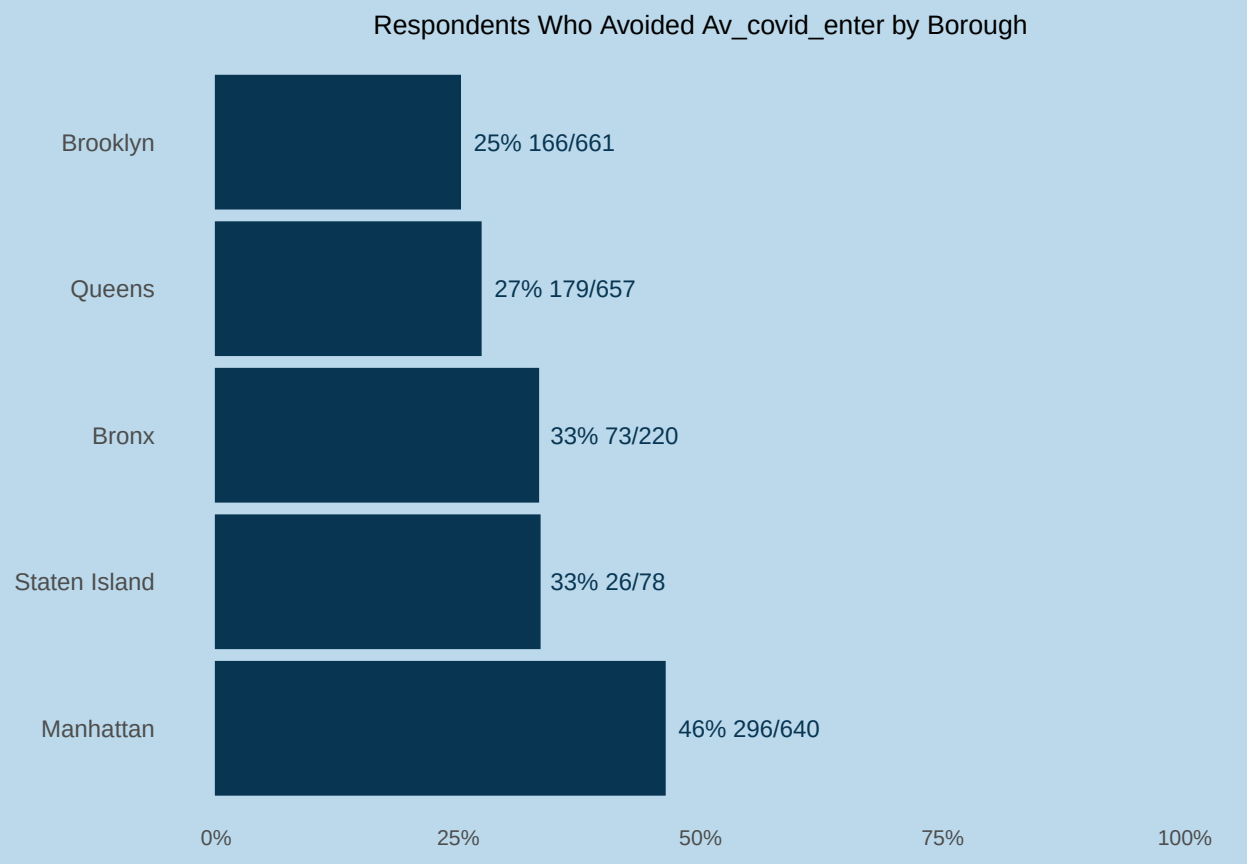



```
##
## [[5]]$race_census$p.values
## [[5]]$race_census$p.values$av_covid_rest
##                                Indigenous American black or african american
## Indigenous American                             NA                        NA
## black or african american                       NA                        NA
## hispanic or latinx                              NA                        NA
## asian                                           NA                        NA
## other                                           NA                        NA
## white (non-hispanic or latino)                  NA                   3.7e-05
## two or more races                               NA                   3.5e-03
##                                hispanic or latinx  asian other
## Indigenous American                            NA     NA    NA
## black or african american                      NA     NA    NA
## hispanic or latinx                             NA     NA    NA
## asian                                          NA     NA    NA
## other                                          NA     NA    NA
## white (non-hispanic or latino)           5.7e-05 0.0034    NA
## two or more races                        4.9e-03 0.0100    NA
##                                white (non-hispanic or latino) two or more races
## Indigenous American                                        NA                NA
## black or african american                              3.7e-05            0.0035
## hispanic or latinx                                     5.7e-05            0.0049
## asian                                                  3.4e-03            0.0100
## other                                                      NA                NA
## white (non-hispanic or latino)                             NA                NA
```

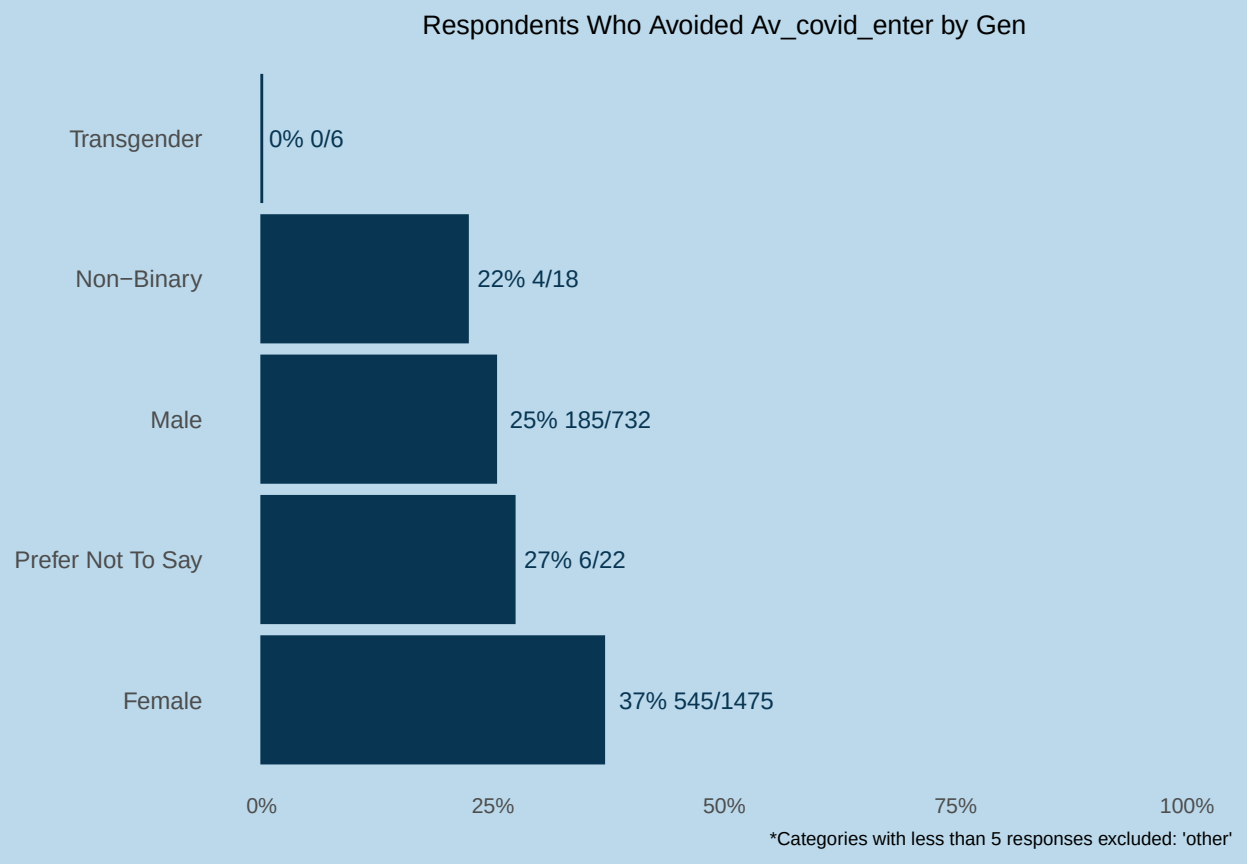
```
## two or more races                                        NA                 NA
##
##
##
## [[5]]$hh_ch_0_17_bi
## NULL
##
## [[5]]$hh_sn_65_bi
## [[5]]$hh_sn_65_bi$plot
```



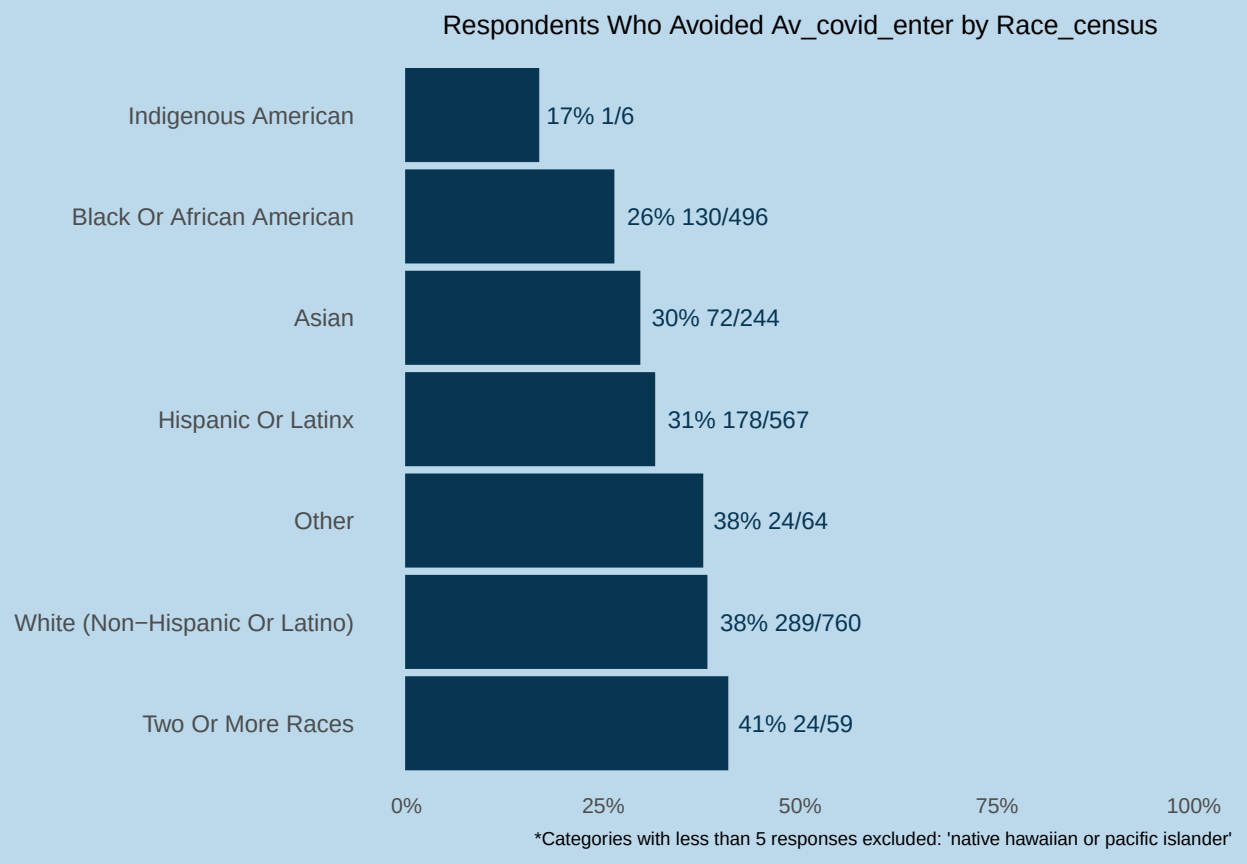

```
##
## [[5]]$hh_sn_65_bi$p.values
## [[5]]$hh_sn_65_bi$p.values$av_covid_rest
##                            household without seniors household with seniors
## household without seniors                        NA                3.2e-08
## household with seniors                      3.2e-08                     NA
##
##
##
## [[5]]$inc_dist
## NULL
##
##
## [[6]]
## [[6]]$borough
## [[6]]$borough$plot
```




```
##
## [[6]]$borough$p.values
## [[6]]$borough$p.values$av_covid_enter
##               brooklyn  queens   bronx staten island manhattan
## brooklyn            NA      NA      NA            NA   2.6e-15
## queens              NA      NA      NA            NA   1.9e-12
## bronx               NA      NA      NA            NA   9.7e-04
## staten island       NA      NA      NA            NA        NA
## manhattan      2.6e-15 1.9e-12 0.00097            NA        NA
##
##
##
## [[6]]$gen
## [[6]]$gen$plot
```

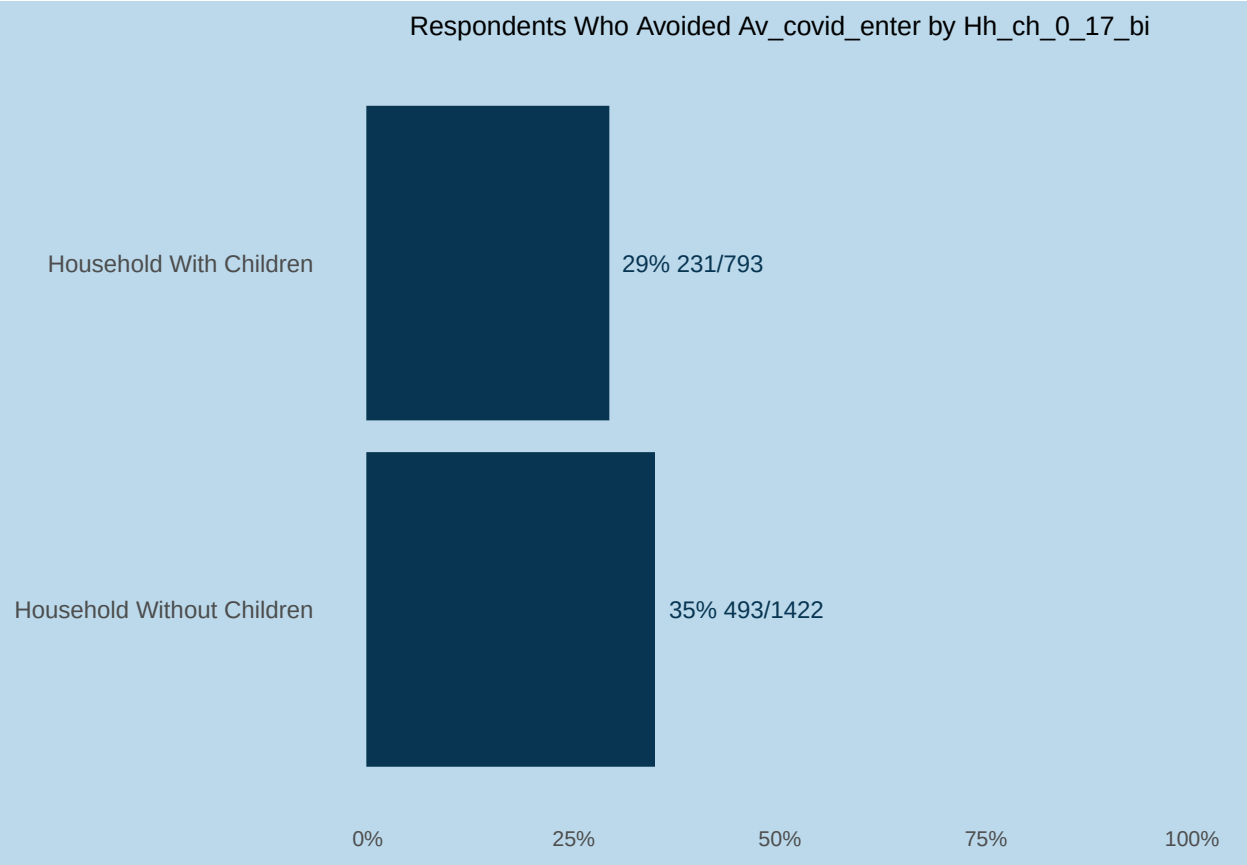



```
##
## [[6]]$gen$p.values
## [[6]]$gen$p.values$av_covid_enter
##                    transgender non-binary    male prefer not to say  female
## transgender                 NA         NA      NA                NA      NA
## non-binary                  NA         NA      NA                NA      NA
## male                        NA         NA      NA                NA 5.3e-08
## prefer not to say           NA         NA      NA                NA      NA
## female                      NA         NA 5.3e-08                NA      NA
##
##
##
## [[6]]$race_census
## [[6]]$race_census$plot
```

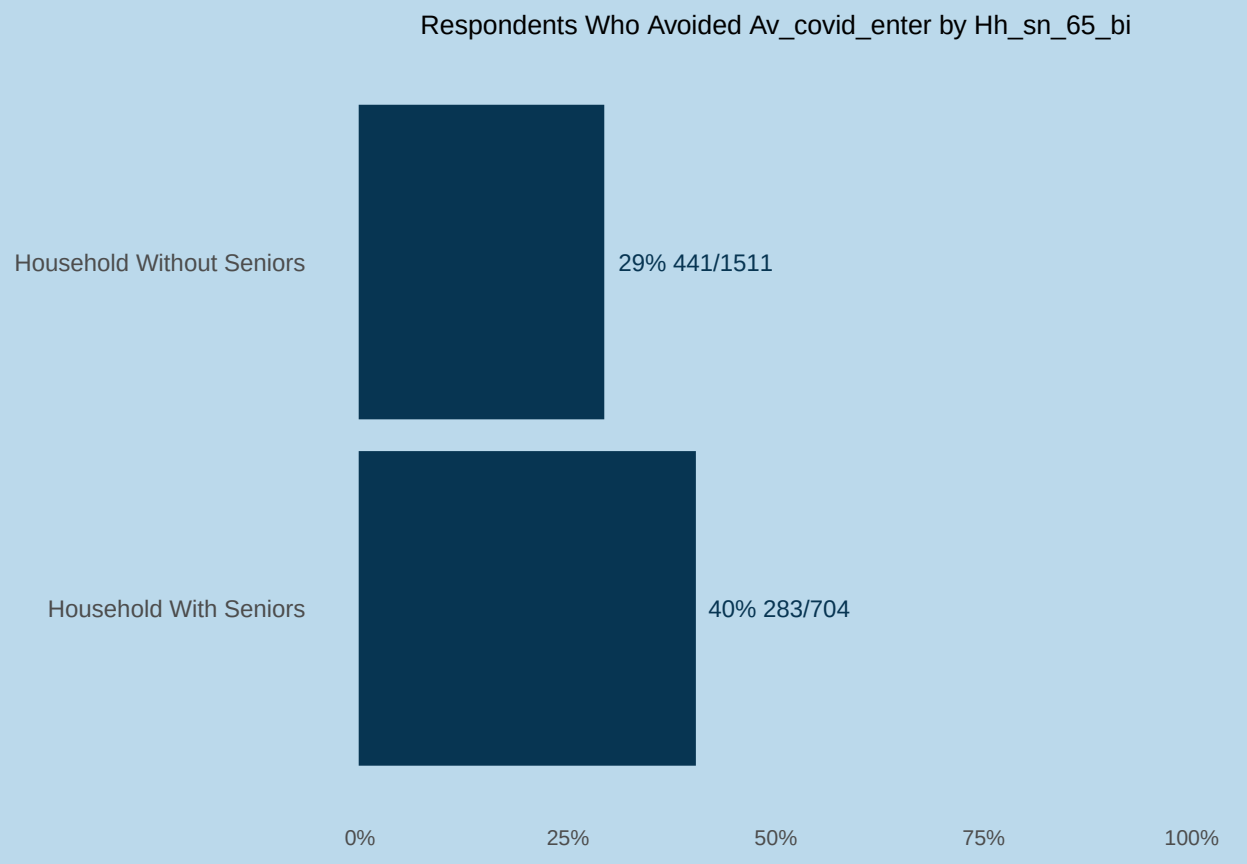



```
##
## [[6]]$race_census$p.values
## [[6]]$race_census$p.values$av_covid_enter
##                                Indigenous American black or african american
## Indigenous American                             NA                        NA
## black or african american                       NA                        NA
## asian                                           NA                        NA
## hispanic or latinx                              NA                        NA
## other                                           NA                        NA
## white (non-hispanic or latino)                  NA                   1.9e-05
## two or more races                               NA                        NA
##                                asian hispanic or latinx other
## Indigenous American               NA                 NA    NA
## black or african american         NA                 NA    NA
## asian                             NA                 NA    NA
## hispanic or latinx                NA                 NA    NA
## other                             NA                 NA    NA
## white (non-hispanic or latino)    NA                 NA    NA
## two or more races                 NA                 NA    NA
##                                white (non-hispanic or latino) two or more races
## Indigenous American                                        NA                NA
## black or african american                              1.9e-05                NA
## asian                                                      NA                NA
## hispanic or latinx                                         NA                NA
## other                                                      NA                NA
## white (non-hispanic or latino)                             NA                NA
```

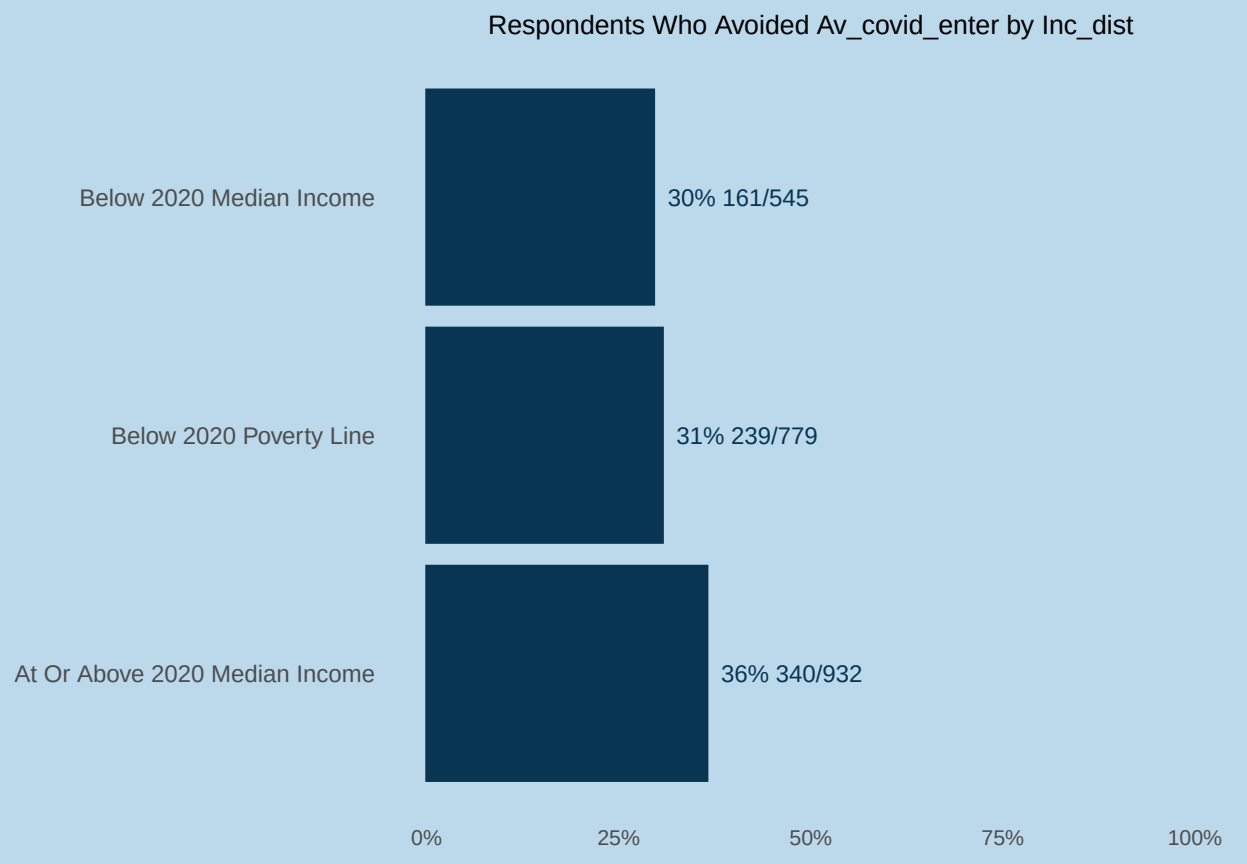
```
## two or more races                                          NA                 NA
##
##
##
## [[6]]$hh_ch_0_17_bi
## [[6]]$hh_ch_0_17_bi$plot
```



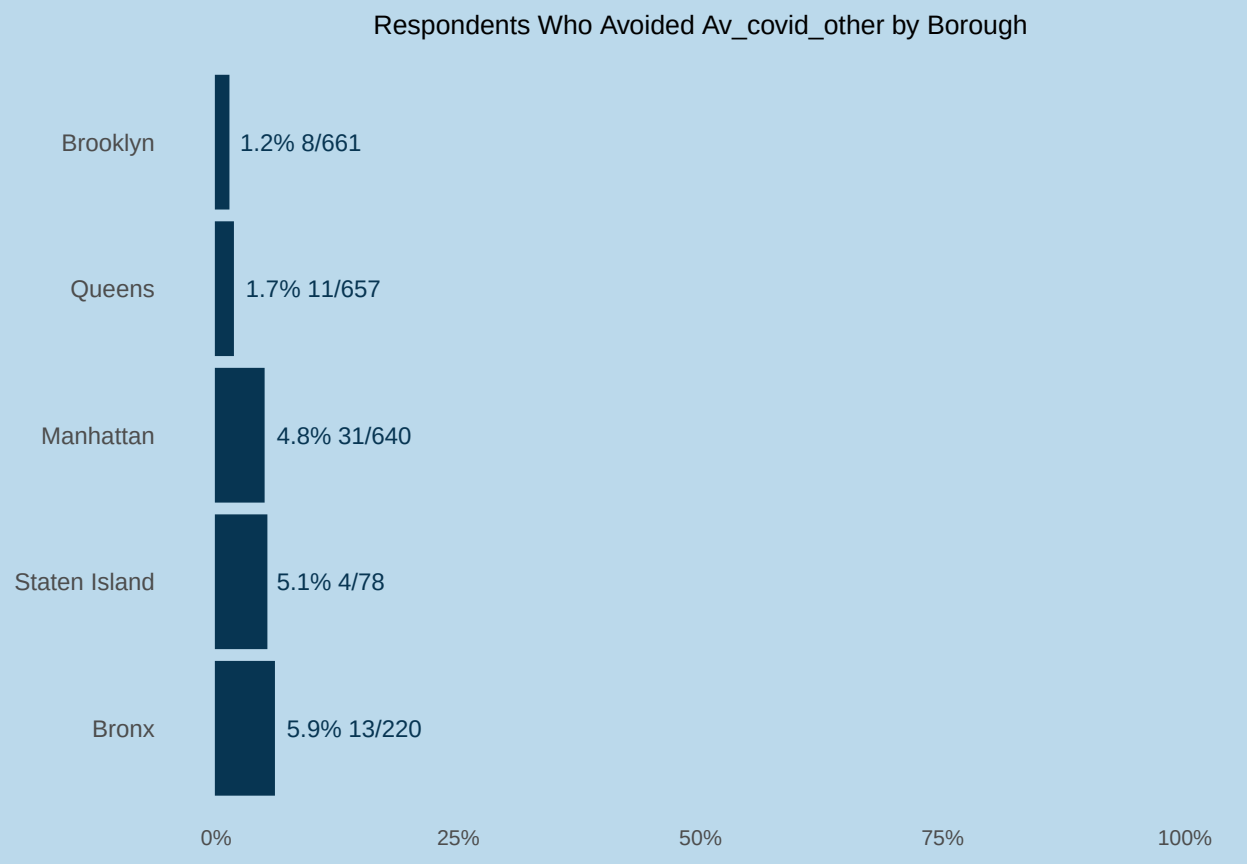

```
##
## [[6]]$hh_ch_0_17_bi$p.values
## [[6]]$hh_ch_0_17_bi$p.values$av_covid_enter
##                            household with children household without children
## household with children                         NA                     0.0089
## household without children                 0.0089                         NA
##
##
##
## [[6]]$hh_sn_65_bi
## [[6]]$hh_sn_65_bi$plot
```



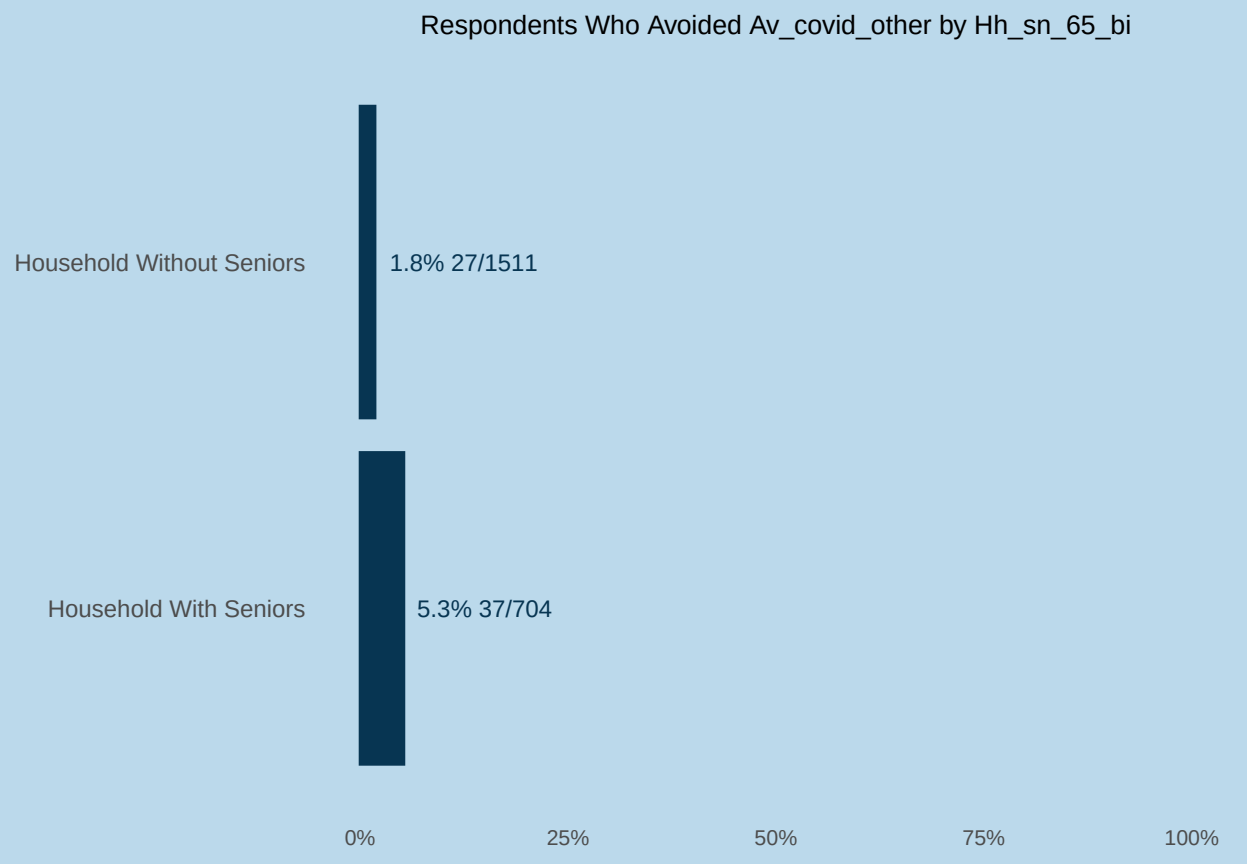

```
##
## [[6]]$hh_sn_65_bi$p.values
## [[6]]$hh_sn_65_bi$p.values$av_covid_enter
##                           household without seniors household with seniors
## household without seniors                        NA                3.5e-07
## household with seniors                      3.5e-07                     NA
##
##
##
## [[6]]$inc_dist
## [[6]]$inc_dist$plot
```



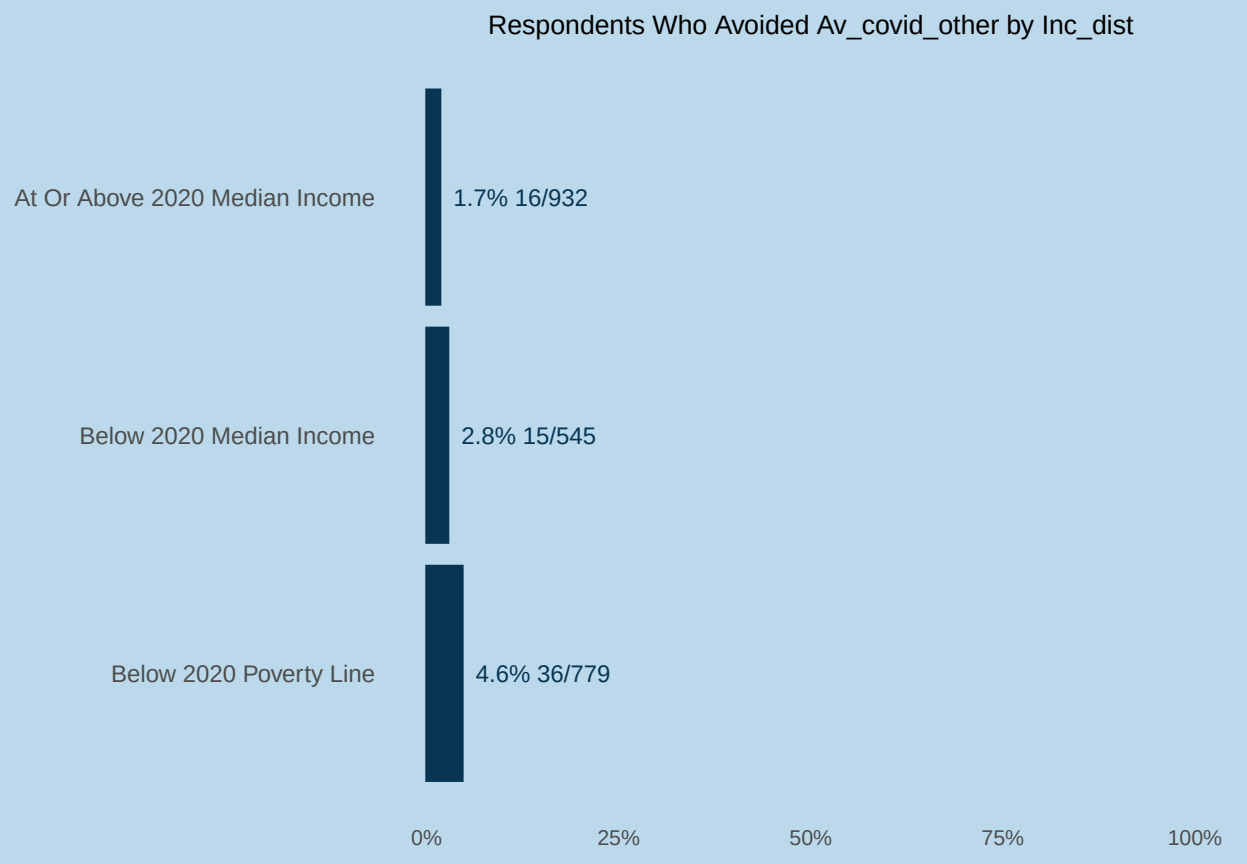

```
##
## [[6]]$inc_dist$p.values
## [[6]]$inc_dist$p.values$av_covid_enter
##                                 below 2020 median income below 2020 poverty line
## below 2020 median income                              NA                       NA
## below 2020 poverty line                               NA                       NA
## at or above 2020 median income                    0.0078                       NA
##                                 at or above 2020 median income
## below 2020 median income                                0.0078
## below 2020 poverty line                                     NA
## at or above 2020 median income                              NA
##
##
##
##
## [[7]]
## [[7]]$borough
## [[7]]$borough$plot
```



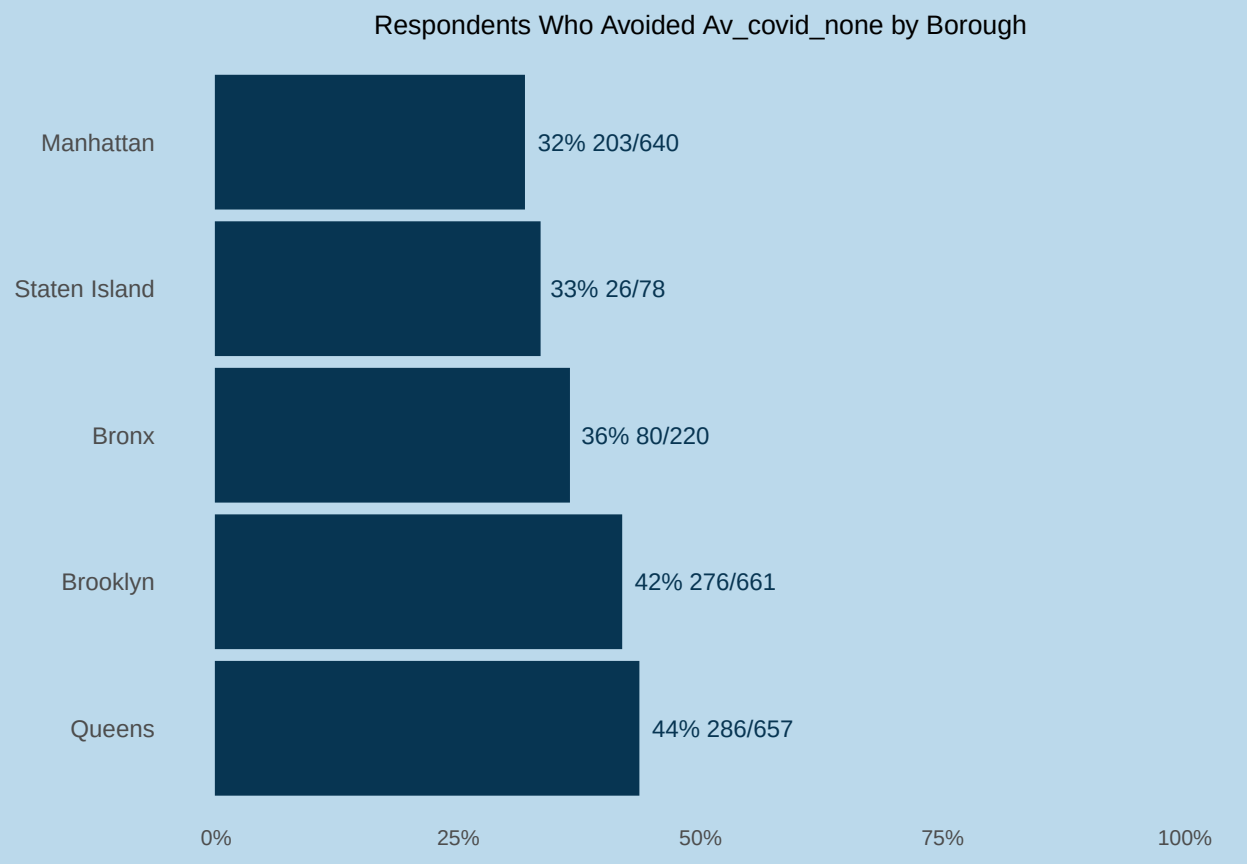

```
##
## [[7]]$borough$p.values
## [[7]]$borough$p.values$av_covid_other
##               brooklyn queens manhattan staten island   bronx
## brooklyn            NA     NA   0.00023            NA 0.00021
## queens              NA     NA   0.00220            NA 0.00200
## manhattan      0.00023 0.0022        NA            NA      NA
## staten island       NA     NA        NA            NA      NA
## bronx          0.00021 0.0020        NA            NA      NA
##
##
##
## [[7]]$gen
## NULL
##
## [[7]]$race_census
## NULL
##
## [[7]]$hh_ch_0_17_bi
## NULL
##
## [[7]]$hh_sn_65_bi
## [[7]]$hh_sn_65_bi$plot
```



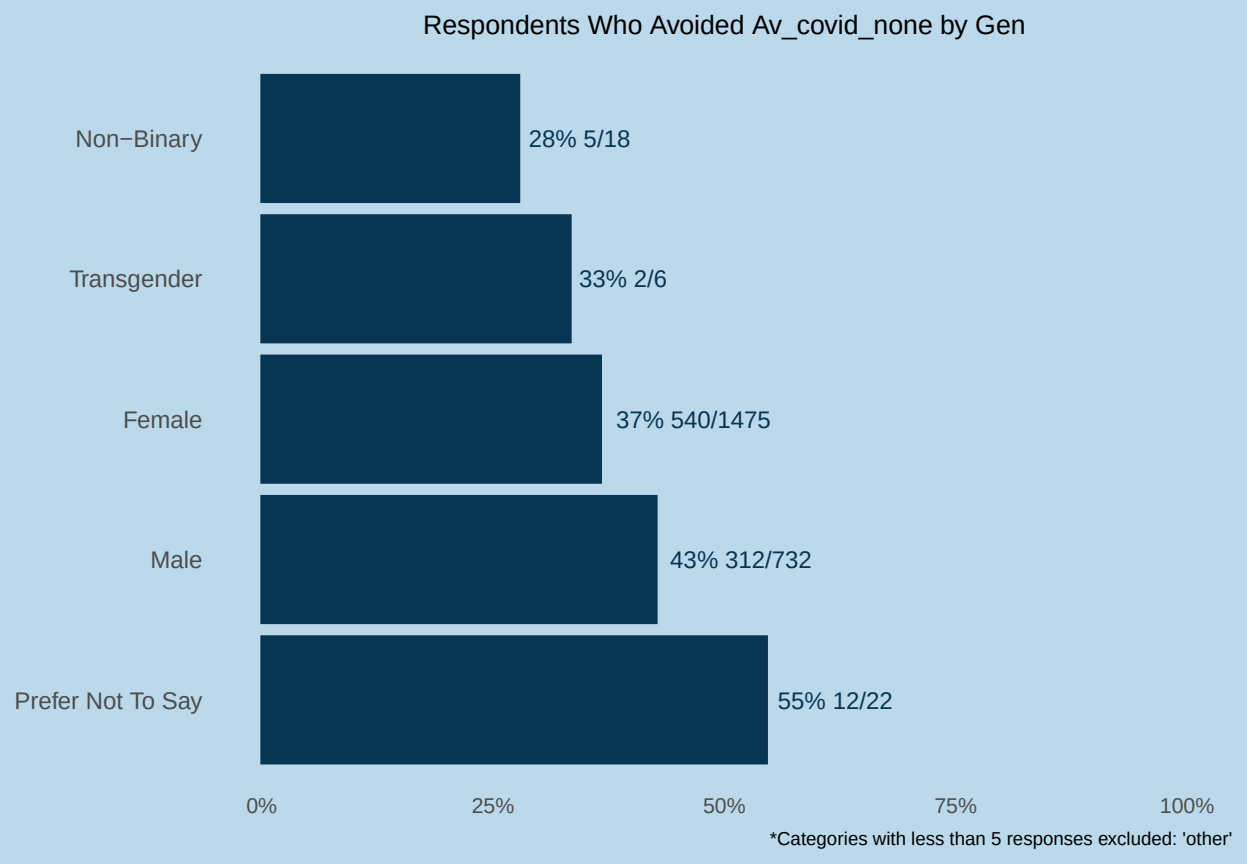

```
##
## [[7]]$hh_sn_65_bi$p.values
## [[7]]$hh_sn_65_bi$p.values$av_covid_other
##                            household without seniors household with seniors
## household without seniors                        NA                1.1e-05
## household with seniors                        1.1e-05                    NA
##
##
##
## [[7]]$inc_dist
## [[7]]$inc_dist$plot
```




```
##
## [[7]]$inc_dist$p.values
## [[7]]$inc_dist$p.values$av_covid_other
##                                 at or above 2020 median income
## at or above 2020 median income                              NA
## below 2020 median income                                    NA
## below 2020 poverty line                                0.00083
##                                 below 2020 median income below 2020 poverty line
## at or above 2020 median income                       NA                 0.00083
## below 2020 median income                             NA                      NA
## below 2020 poverty line                              NA                      NA
##
##
##
##
## [[8]]
## [[8]]$borough
## [[8]]$borough$plot
```




```
##
## [[8]]$borough$p.values
## [[8]]$borough$p.values$av_covid_none
##               manhattan staten island bronx brooklyn  queens
## manhattan            NA            NA    NA  0.00022 1.5e-05
## staten island        NA            NA    NA       NA      NA
## bronx                NA            NA    NA       NA      NA
## brooklyn        2.2e-04            NA    NA       NA      NA
## queens          1.5e-05            NA    NA       NA      NA
##
##
##
## [[8]]$gen
## [[8]]$gen$plot
```




```
##
## [[8]]$gen$p.values
## [[8]]$gen$p.values$av_covid_none
##                   non-binary transgender female   male prefer not to say
## non-binary                NA          NA     NA     NA                NA
## transgender               NA          NA     NA     NA                NA
## female                    NA          NA     NA 0.0072                NA
## male                      NA          NA 0.0072     NA                NA
## prefer not to say         NA          NA     NA     NA                NA
##
##
##
## [[8]]$race_census
## NULL
##
## [[8]]$hh_ch_0_17_bi
## NULL
##
## [[8]]$hh_sn_65_bi
## NULL
##
## [[8]]$inc_dist
## NULL
```

```
cat("Plots with no statistically significant result are omitted from printing. See those marked with 'NU
```

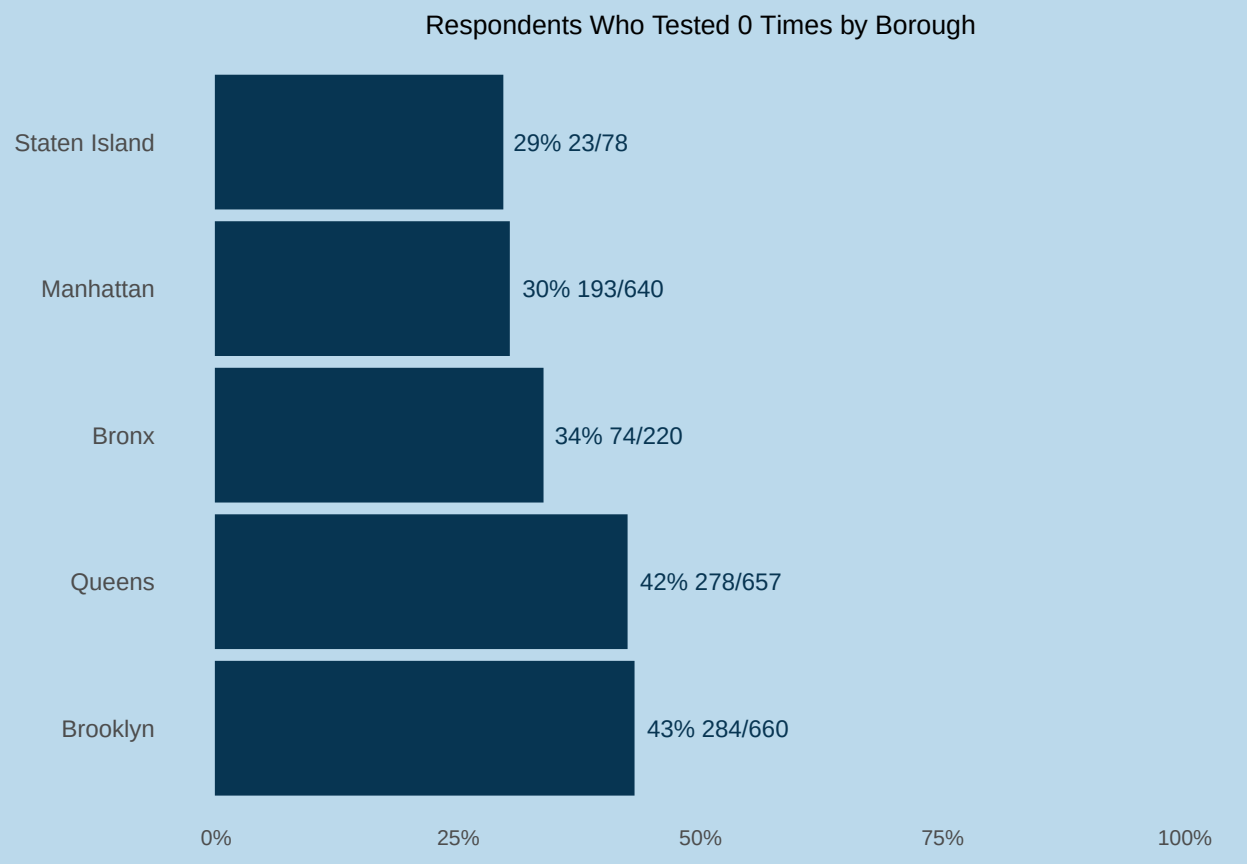
```
## Plots with no statistically significant result are omitted from printing. See those marked with 'NULL
```

4.15) Distribution over frequency of testing

1. Run each type of frequency over the sub demographic groups

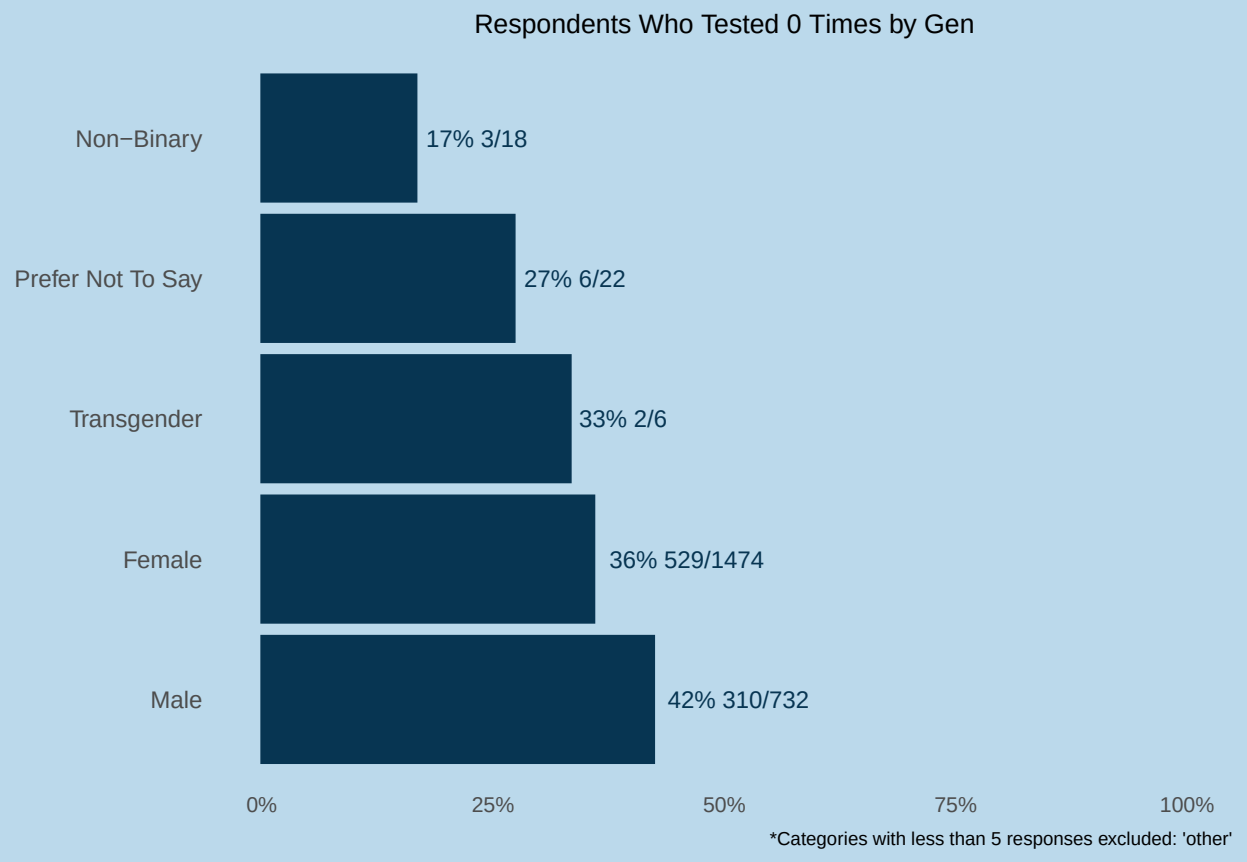
```
lapply(1:4, function(var) {
  freq <- names(attributes(wrangled$test)$labels[var])
  make_plots(wrangled %>% mutate(test_freq = test == var), demographics, "test_freq",
             title = glue::glue("Respondents who tested {freq}"))
})
```

```
## [[1]]
## [[1]]$borough
## [[1]]$borough$plot
```

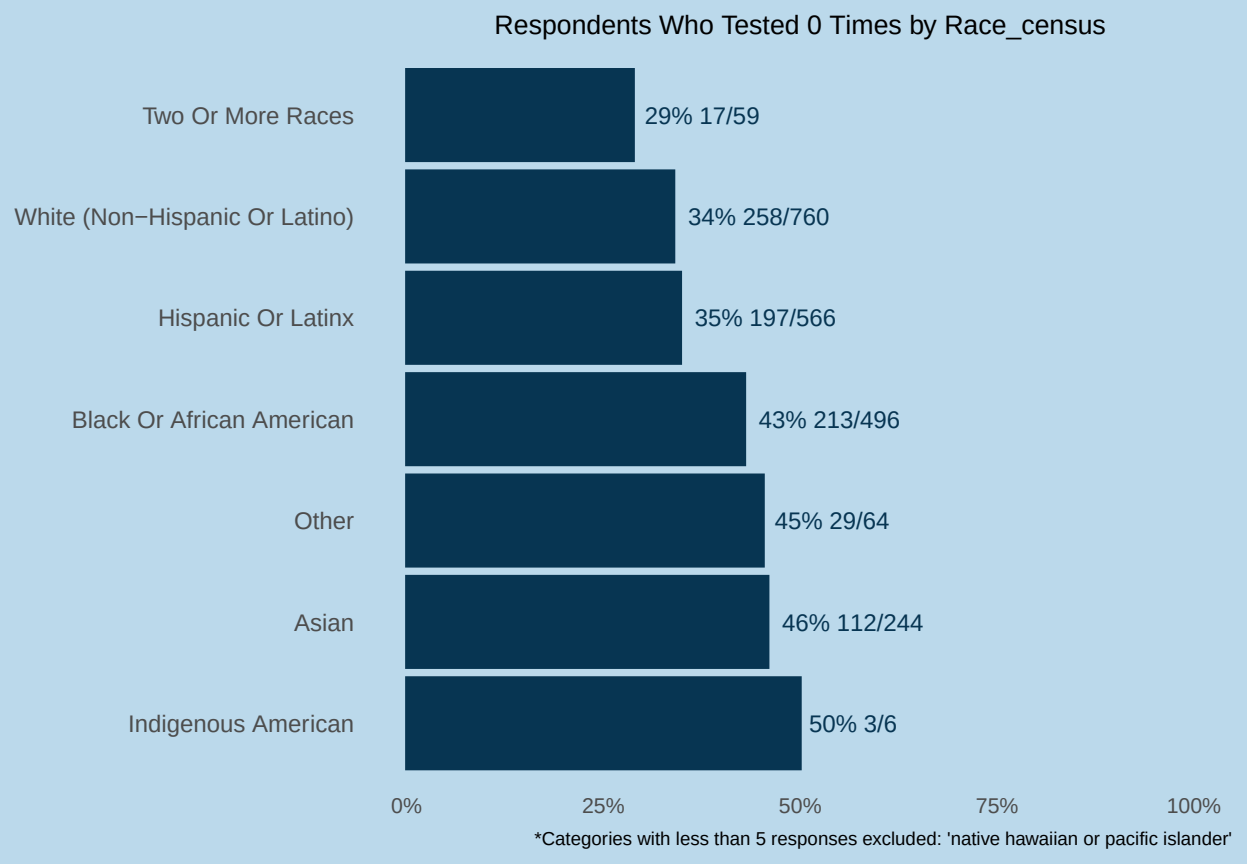



```
##
## [[1]]$borough$p.values
## [[1]]$borough$p.values$test_freq
##               staten island manhattan bronx queens brooklyn
```

```
## staten island            NA        NA    NA     NA       NA
## manhattan                NA        NA    NA  7e-06    2e-06
## bronx                    NA        NA    NA     NA       NA
## queens                   NA     7e-06    NA     NA       NA
## brooklyn                 NA     2e-06    NA     NA       NA
##
##
##
## [[1]]$gen
## [[1]]$gen$plot
```

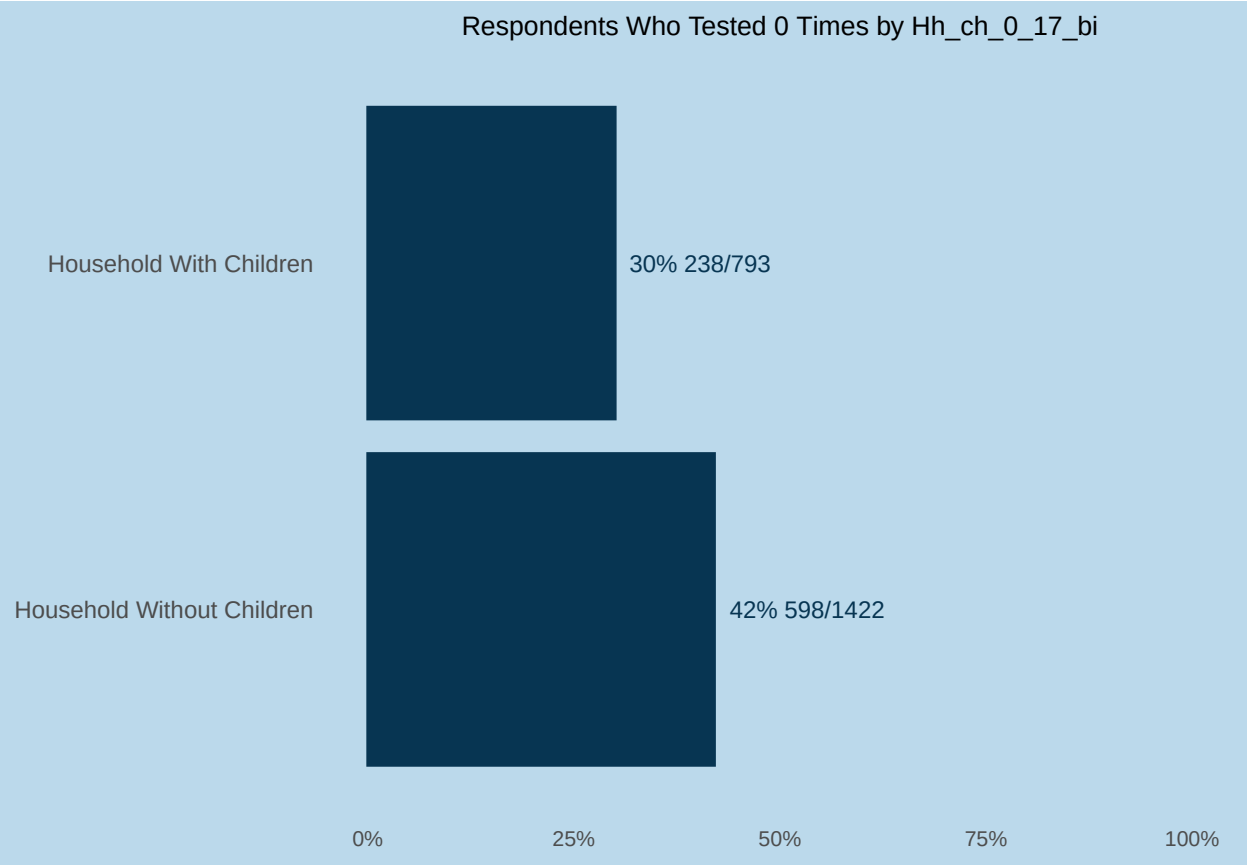



```
##
## [[1]]$gen$p.values
## [[1]]$gen$p.values$test_freq
##                  non-binary prefer not to say transgender female   male
## non-binary               NA               NA          NA     NA     NA
## prefer not to say        NA               NA          NA     NA     NA
## transgender              NA               NA          NA     NA     NA
## female                   NA               NA          NA     NA 0.0038
## male                     NA               NA          NA 0.0038     NA
##
##
##
## [[1]]$race_census
## [[1]]$race_census$plot
```

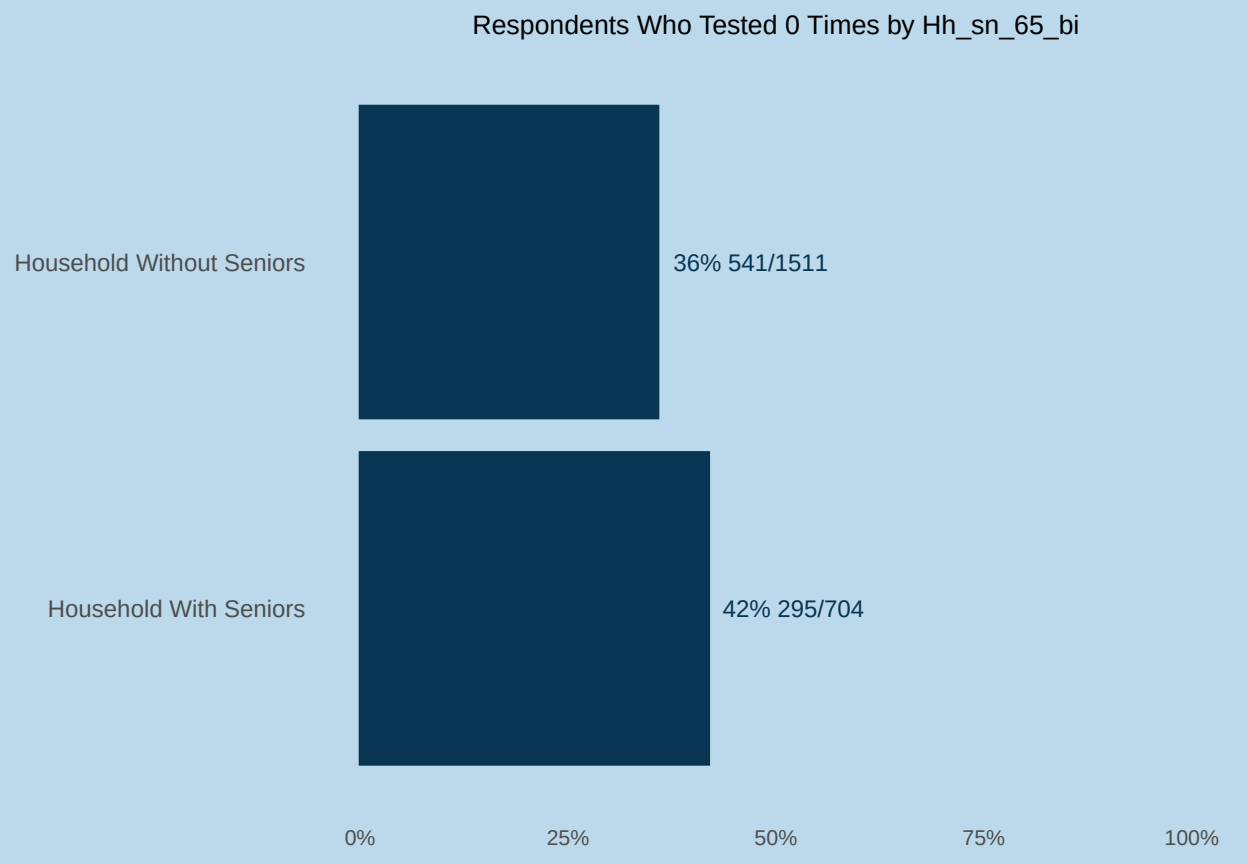



```
##
## [[1]]$race_census$p.values
## [[1]]$race_census$p.values$test_freq
##                                two or more races white (non-hispanic or latino)
## two or more races                             NA                             NA
## white (non-hispanic or latino)                NA                             NA
## hispanic or latinx                            NA                             NA
## black or african american                     NA                         0.0016
## other                                         NA                             NA
## asian                                         NA                         0.0010
## Indigenous American                           NA                             NA
##                                hispanic or latinx black or african american
## two or more races                              NA                         NA
## white (non-hispanic or latino)                 NA                     0.0016
## hispanic or latinx                             NA                     0.0079
## black or african american                  0.0079                         NA
## other                                          NA                         NA
## asian                                      0.0037                         NA
## Indigenous American                            NA                         NA
##                                other  asian Indigenous American
## two or more races                 NA     NA                   NA
## white (non-hispanic or latino)    NA 0.0010                   NA
## hispanic or latinx                NA 0.0037                   NA
## black or african american         NA     NA                   NA
## other                             NA     NA                   NA
## asian                             NA     NA                   NA
```

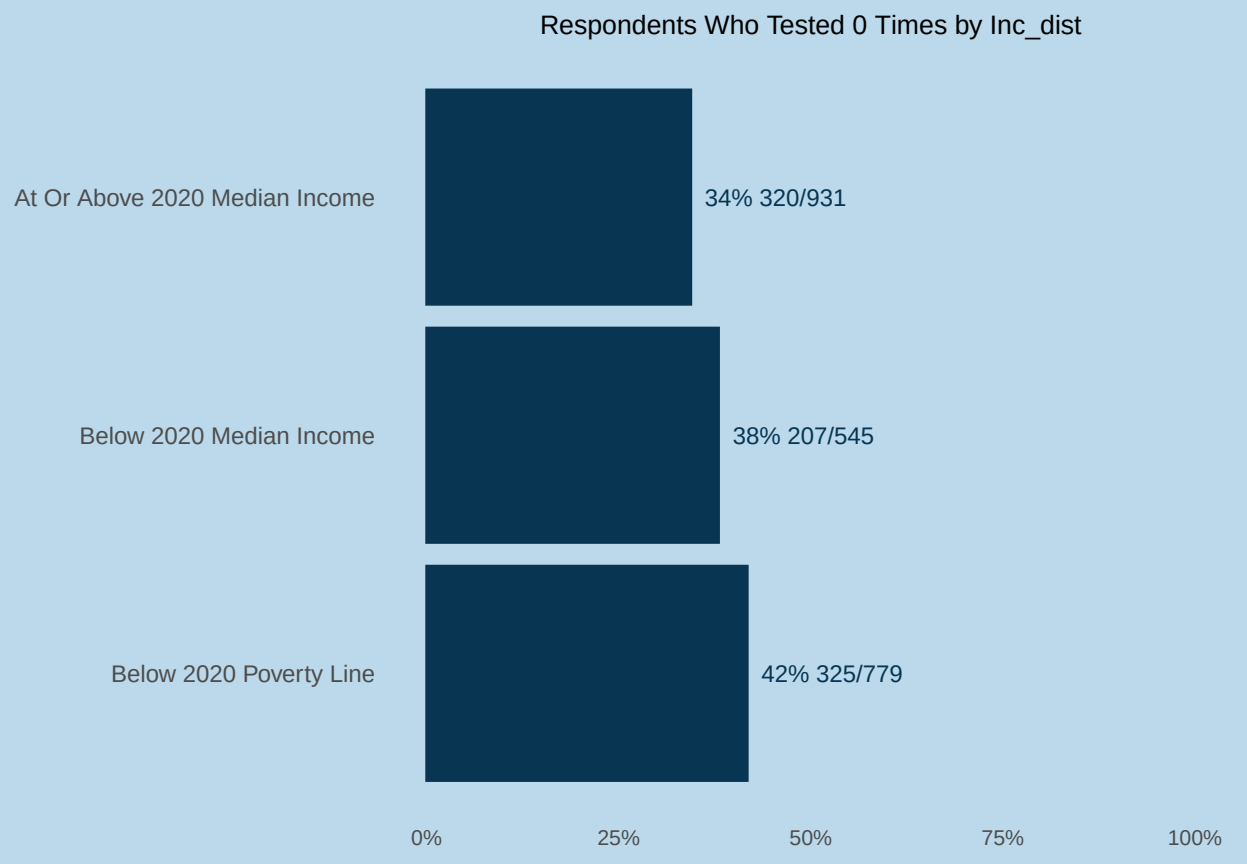
```
## Indigenous American               NA     NA                   NA
##
##
##
## [[1]]$hh_ch_0_17_bi
## [[1]]$hh_ch_0_17_bi$plot
```



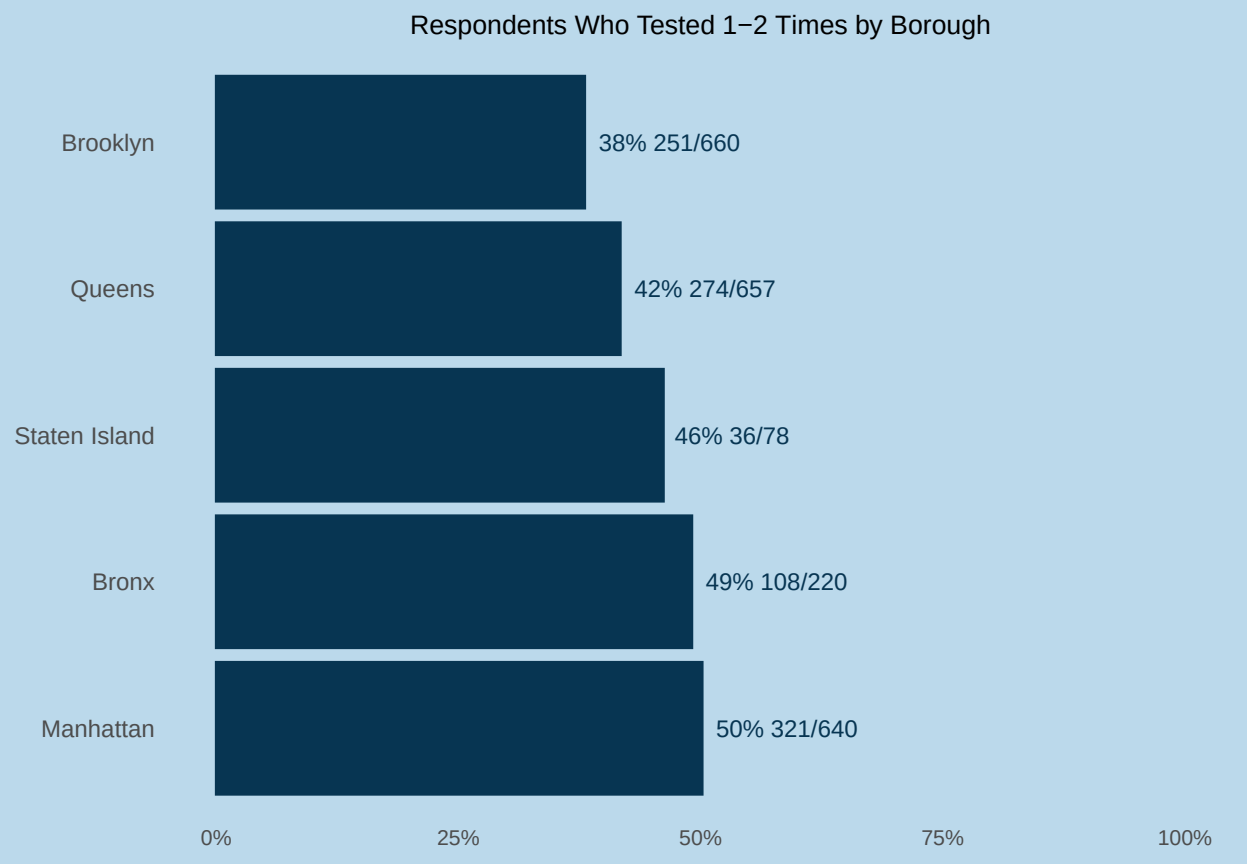

```
##
## [[1]]$hh_ch_0_17_bi$p.values
## [[1]]$hh_ch_0_17_bi$p.values$test_freq
##                            household with children household without children
## household with children                         NA                    2.7e-08
## household without children                2.7e-08                         NA
##
##
##
## [[1]]$hh_sn_65_bi
## [[1]]$hh_sn_65_bi$plot
```



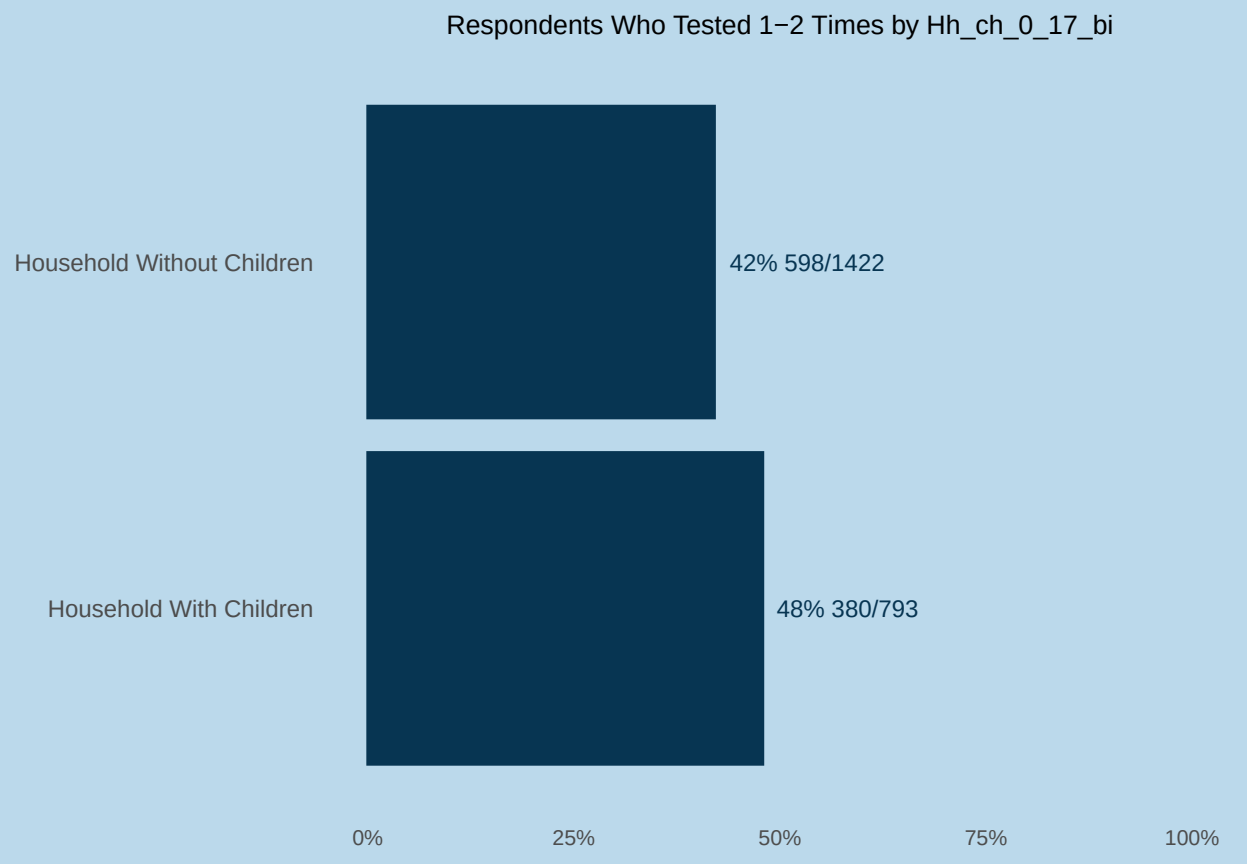

```
##
## [[1]]$hh_sn_65_bi$p.values
## [[1]]$hh_sn_65_bi$p.values$test_freq
##                            household without seniors household with seniors
## household without seniors                        NA                 0.0067
## household with seniors                       0.0067                     NA
##
##
##
## [[1]]$inc_dist
## [[1]]$inc_dist$plot
```



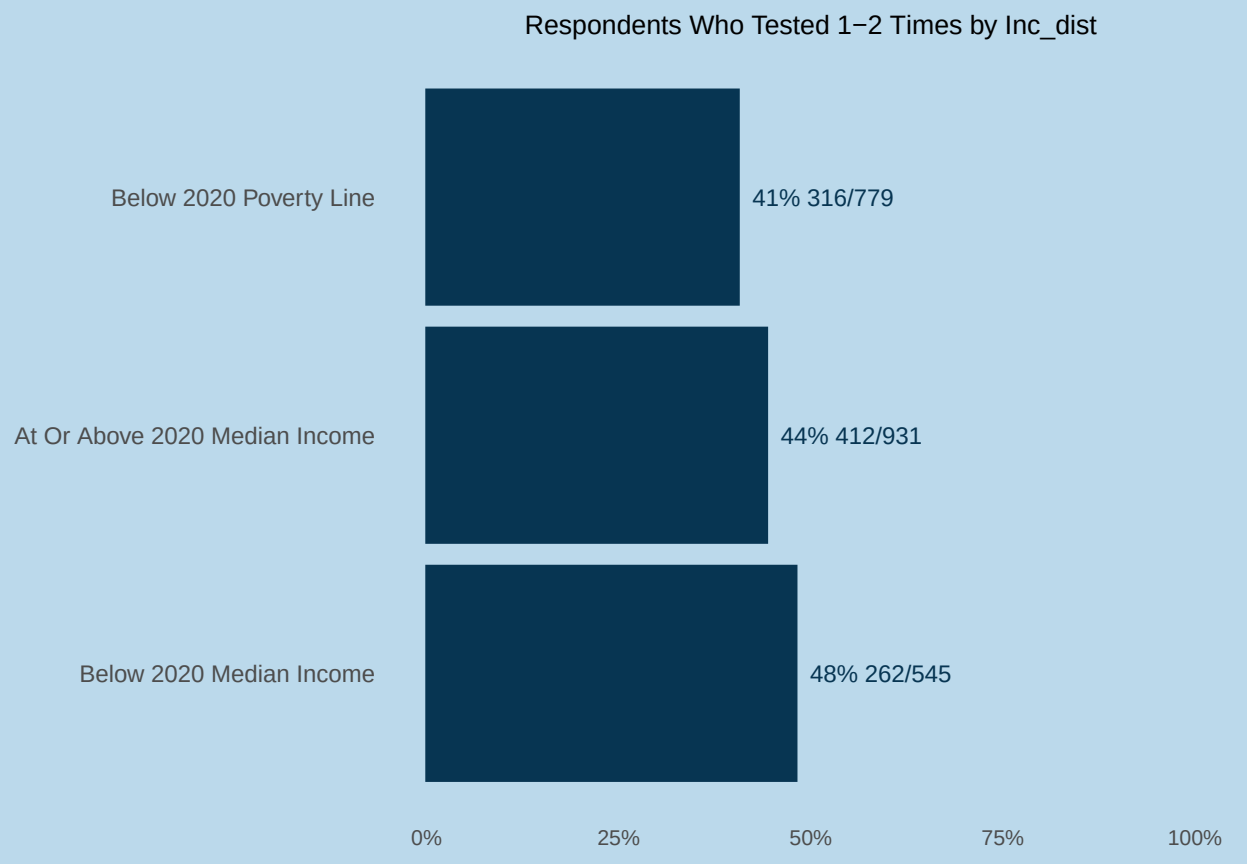

```
##
## [[1]]$inc_dist$p.values
## [[1]]$inc_dist$p.values$test_freq
##                                 at or above 2020 median income
## at or above 2020 median income                              NA
## below 2020 median income                                    NA
## below 2020 poverty line                                 0.0021
##                                 below 2020 median income below 2020 poverty line
## at or above 2020 median income                       NA                  0.0021
## below 2020 median income                             NA                      NA
## below 2020 poverty line                              NA                      NA
##
##
##
##
## [[2]]
## [[2]]$borough
## [[2]]$borough$plot
```




```
##
## [[2]]$borough$p.values
## [[2]]$borough$p.values$test_freq
##               brooklyn queens staten island  bronx manhattan
## brooklyn            NA     NA            NA 0.0049   1.4e-05
## queens              NA     NA            NA     NA   2.7e-03
## staten island       NA     NA            NA     NA        NA
## bronx          4.9e-03     NA            NA     NA        NA
## manhattan      1.4e-05 0.0027            NA     NA        NA
##
##
##
## [[2]]$gen
## NULL
##
## [[2]]$race_census
## NULL
##
## [[2]]$hh_ch_0_17_bi
## [[2]]$hh_ch_0_17_bi$plot
```

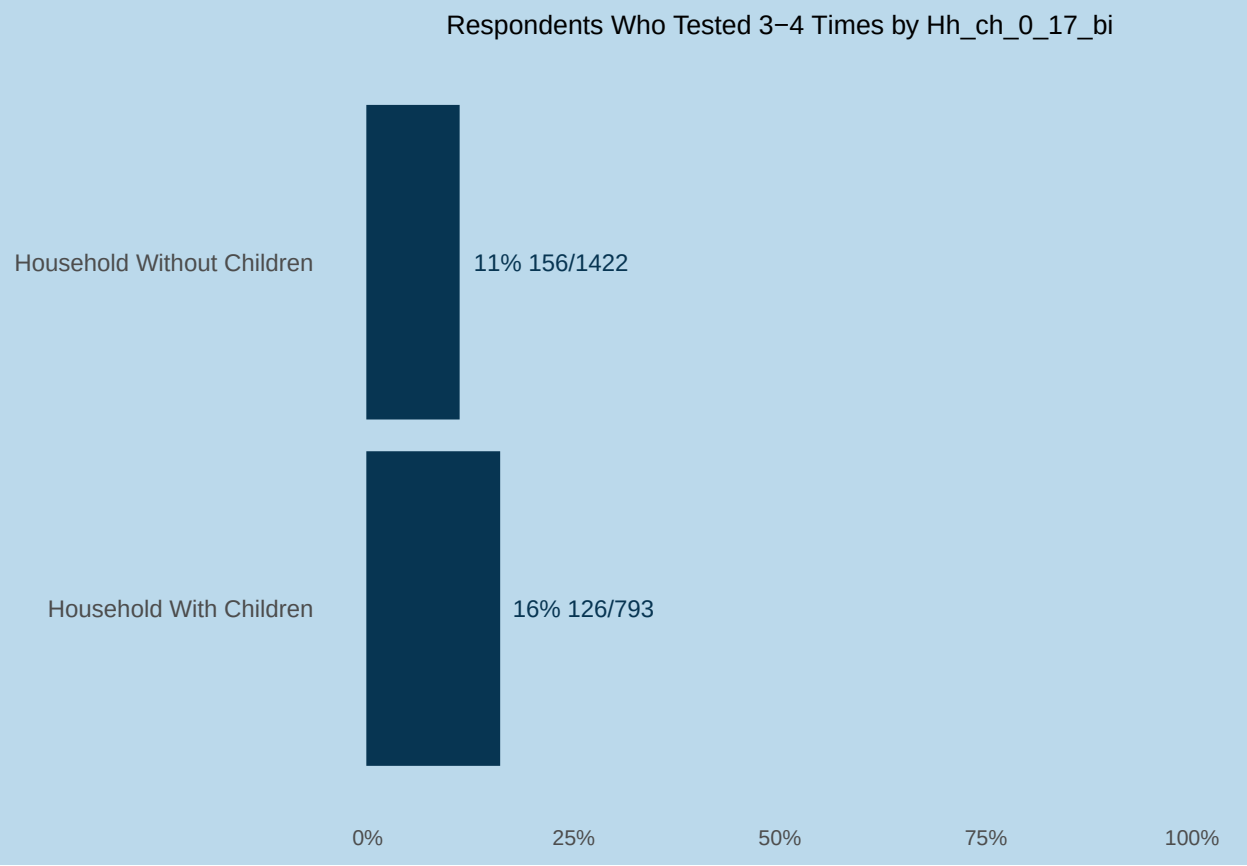



```
##
## [[2]]$hh_ch_0_17_bi$p.values
## [[2]]$hh_ch_0_17_bi$p.values$test_freq
##                             household without children household with children
## household without children                         NA                  0.0088
## household with children                       0.0088                      NA
##
##
##
## [[2]]$hh_sn_65_bi
## NULL
##
## [[2]]$inc_dist
## [[2]]$inc_dist$plot
```



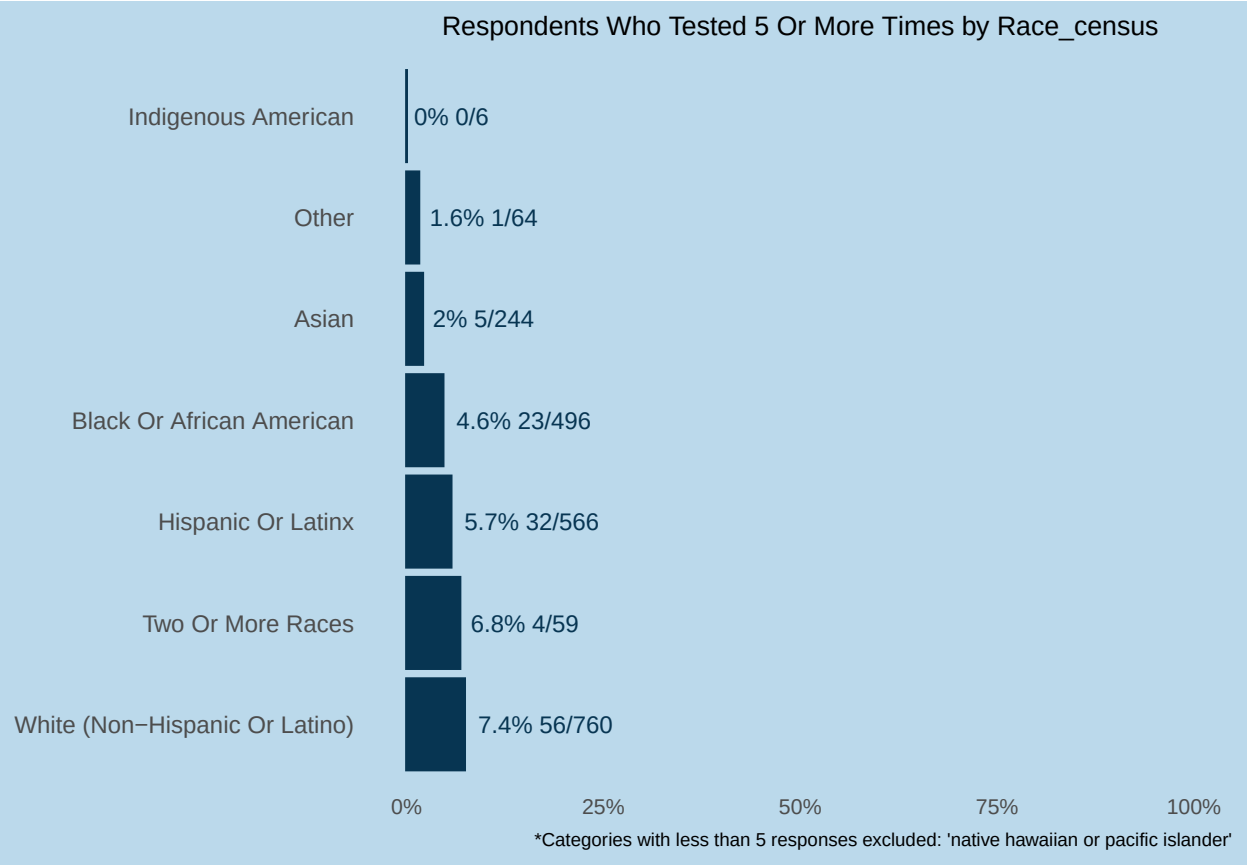

```
##
## [[2]]$inc_dist$p.values
## [[2]]$inc_dist$p.values$test_freq
##                                 below 2020 poverty line
## below 2020 poverty line                              NA
## at or above 2020 median income                       NA
## below 2020 median income                         0.0079
##                                 at or above 2020 median income
## below 2020 poverty line                                     NA
## at or above 2020 median income                              NA
## below 2020 median income                                    NA
##                                 below 2020 median income
## below 2020 poverty line                           0.0079
## at or above 2020 median income                        NA
## below 2020 median income                              NA
##
##
##
##
## [[3]]
## [[3]]$borough
## NULL
##
## [[3]]$gen
## NULL
##
```

```
## [[3]]$race_census
## NULL
##
## [[3]]$hh_ch_0_17_bi
## [[3]]$hh_ch_0_17_bi$plot
```



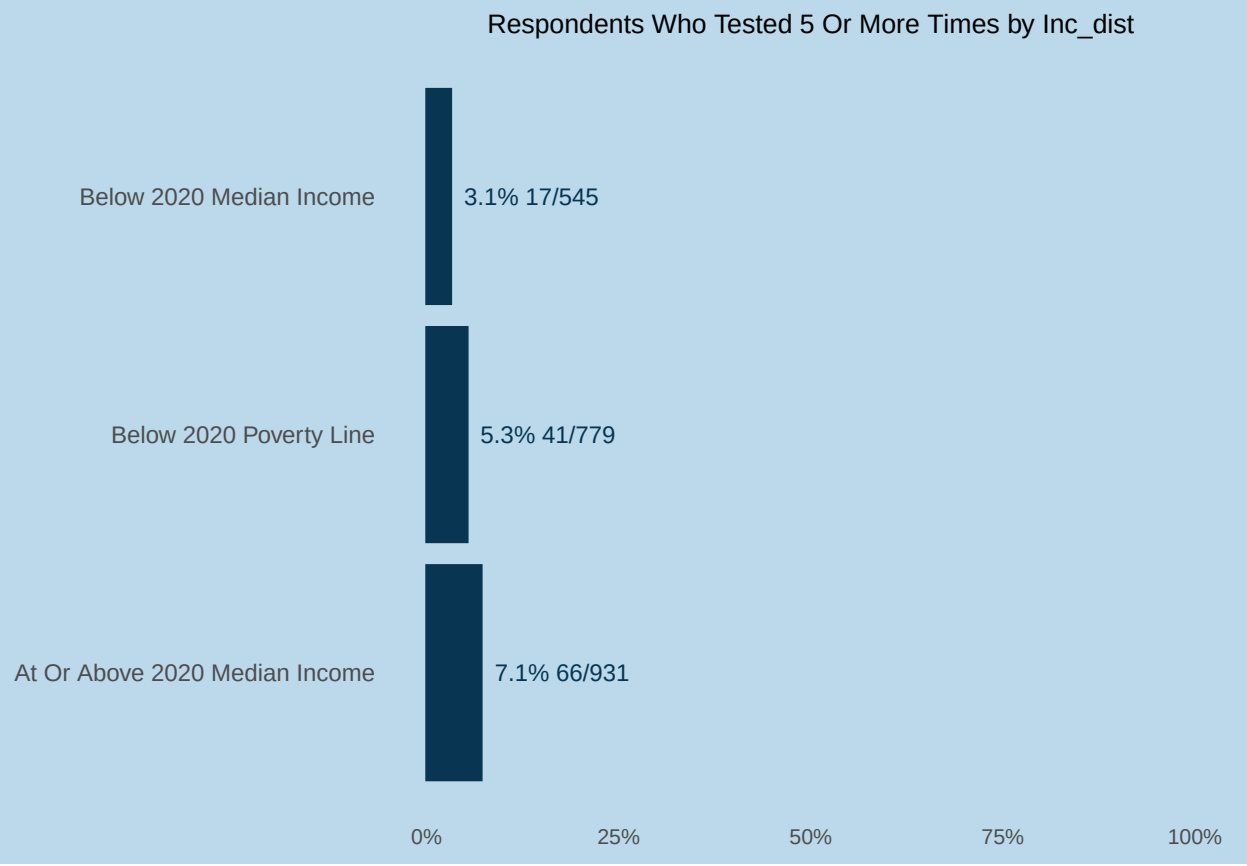

```
##
## [[3]]$hh_ch_0_17_bi$p.values
## [[3]]$hh_ch_0_17_bi$p.values$test_freq
##                             household without children household with children
## household without children                         NA                 0.0011
## household with children                       0.0011                     NA
##
##
##
## [[3]]$hh_sn_65_bi
## NULL
##
## [[3]]$inc_dist
## NULL
##
##
## [[4]]
## [[4]]$borough
## NULL
```

```
##
## [[4]]$gen
## NULL
##
## [[4]]$race_census
## [[4]]$race_census$plot
```




```
##
## [[4]]$race_census$p.values
## [[4]]$race_census$p.values$test_freq
##                                Indigenous American other  asian
## Indigenous American                             NA    NA     NA
## other                                           NA    NA     NA
## asian                                           NA    NA     NA
## black or african american                       NA    NA     NA
## hispanic or latinx                              NA    NA     NA
## two or more races                               NA    NA     NA
## white (non-hispanic or latino)                  NA    NA 0.0041
##                                black or african american hispanic or latinx
## Indigenous American                                    NA                 NA
## other                                                  NA                 NA
## asian                                                  NA                 NA
## black or african american                              NA                 NA
## hispanic or latinx                                     NA                 NA
## two or more races                                      NA                 NA
```

```
## white (non-hispanic or latino)                        NA                  NA
##                                two or more races white (non-hispanic or latino)
## Indigenous American                                    NA                  NA
## other                                                  NA                  NA
## asian                                                  NA              0.0041
## black or african american                              NA                  NA
## hispanic or latinx                                     NA                  NA
## two or more races                                      NA                  NA
## white (non-hispanic or latino)                         NA                  NA
##
##
##
## [[4]]$hh_ch_0_17_bi
## NULL
##
## [[4]]$hh_sn_65_bi
## NULL
##
## [[4]]$inc_dist
## [[4]]$inc_dist$plot
```




```
##
## [[4]]$inc_dist$p.values
## [[4]]$inc_dist$p.values$test_freq
##                                below 2020 median income below 2020 poverty line
```

```
## below 2020 median income                              NA                      NA
## below 2020 poverty line                               NA                      NA
## at or above 2020 median income                    0.0021                      NA
##                                at or above 2020 median income
## below 2020 median income                                0.0021
## below 2020 poverty line                                     NA
## at or above 2020 median income                              NA
```

```
cat("Plots with no statistically significant result are omitted from printing. See those marked with 'NU
```

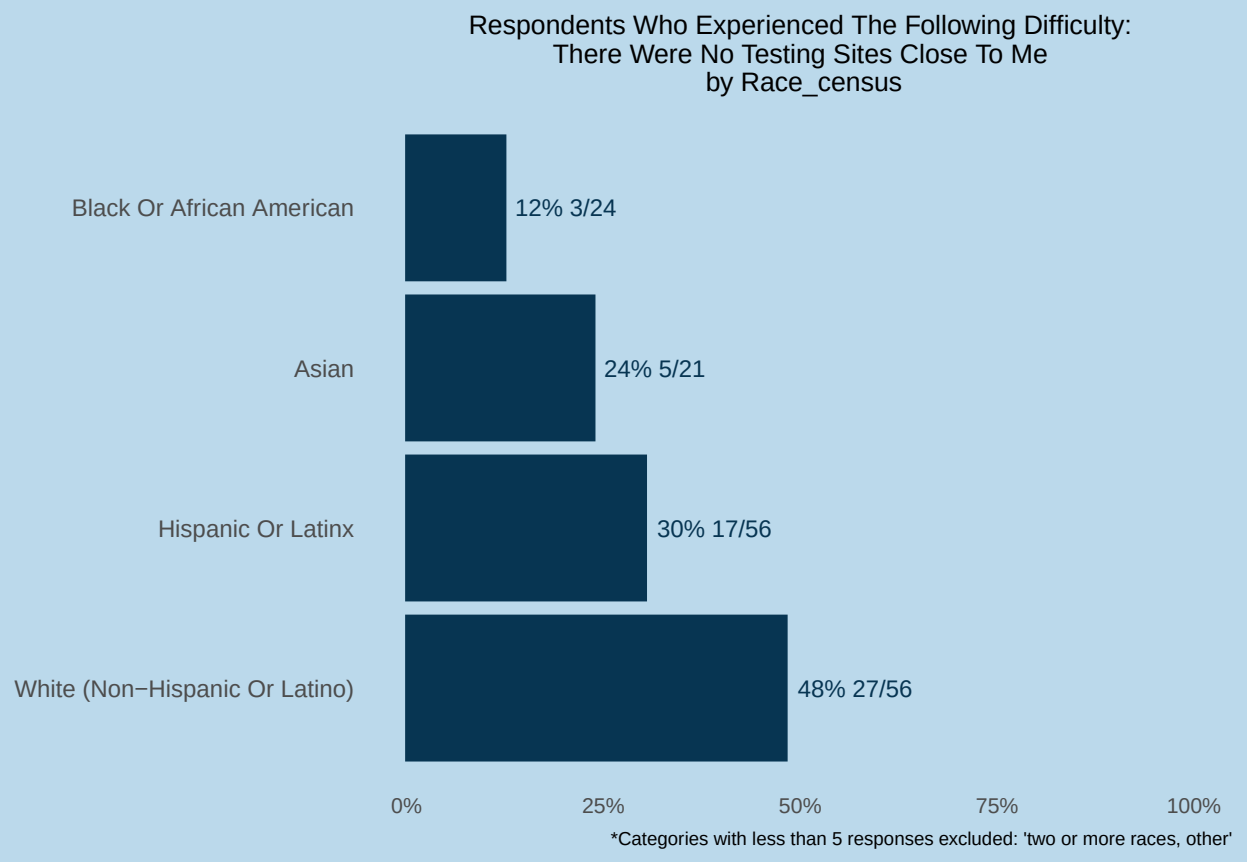
```
## Plots with no statistically significant result are omitted from printing. See those marked with 'NULL
```

4.16) Distribution over each difficulty faced while testing

1. Run each type of difficulty over sub demographic groups

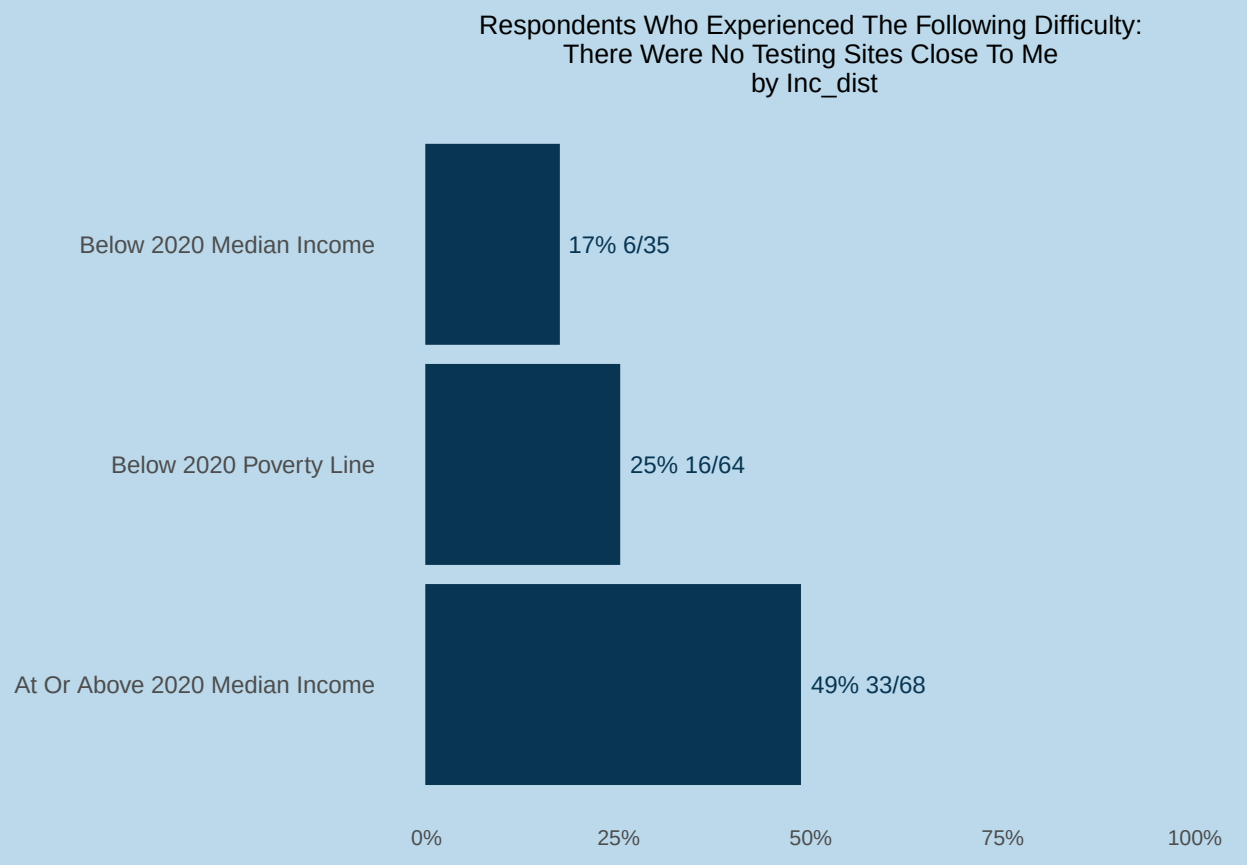
```
test_diffs <- wrangled %>% select(starts_with("test_diffs_") & !ends_with("text")) %>% colnames

lapply(test_diffs, function(test_diff) {
  difficulty <-
    paste0(survey_codebook_labelled$to_name[survey_codebook_labelled$full_name == test_diff], "\n")

  make_plots(wrangled, demographics, test_diff,
             title = paste("Respondents who experienced the following difficulty:", difficulty, sep = "
})
```

```
## [[1]]
## [[1]]$borough
## NULL
##
## [[1]]$gen
## NULL
##
## [[1]]$race_census
## [[1]]$race_census$plot
```




```
##
## [[1]]$race_census$p.values
## [[1]]$race_census$p.values$test_diffs_close
##                                 black or african american asian
## black or african american                                NA    NA
## asian                                                    NA    NA
## hispanic or latinx                                       NA    NA
## white (non-hispanic or latino)                       0.0056    NA
##                                 hispanic or latinx
## black or african american                       NA
## asian                                           NA
## hispanic or latinx                              NA
## white (non-hispanic or latino)                  NA
##                                 white (non-hispanic or latino)
## black or african american                               0.0056
## asian                                                      NA
## hispanic or latinx                                         NA
## white (non-hispanic or latino)                             NA
##
##
##
## [[1]]$hh_ch_0_17_bi
## NULL
##
## [[1]]$hh_sn_65_bi
## NULL
```

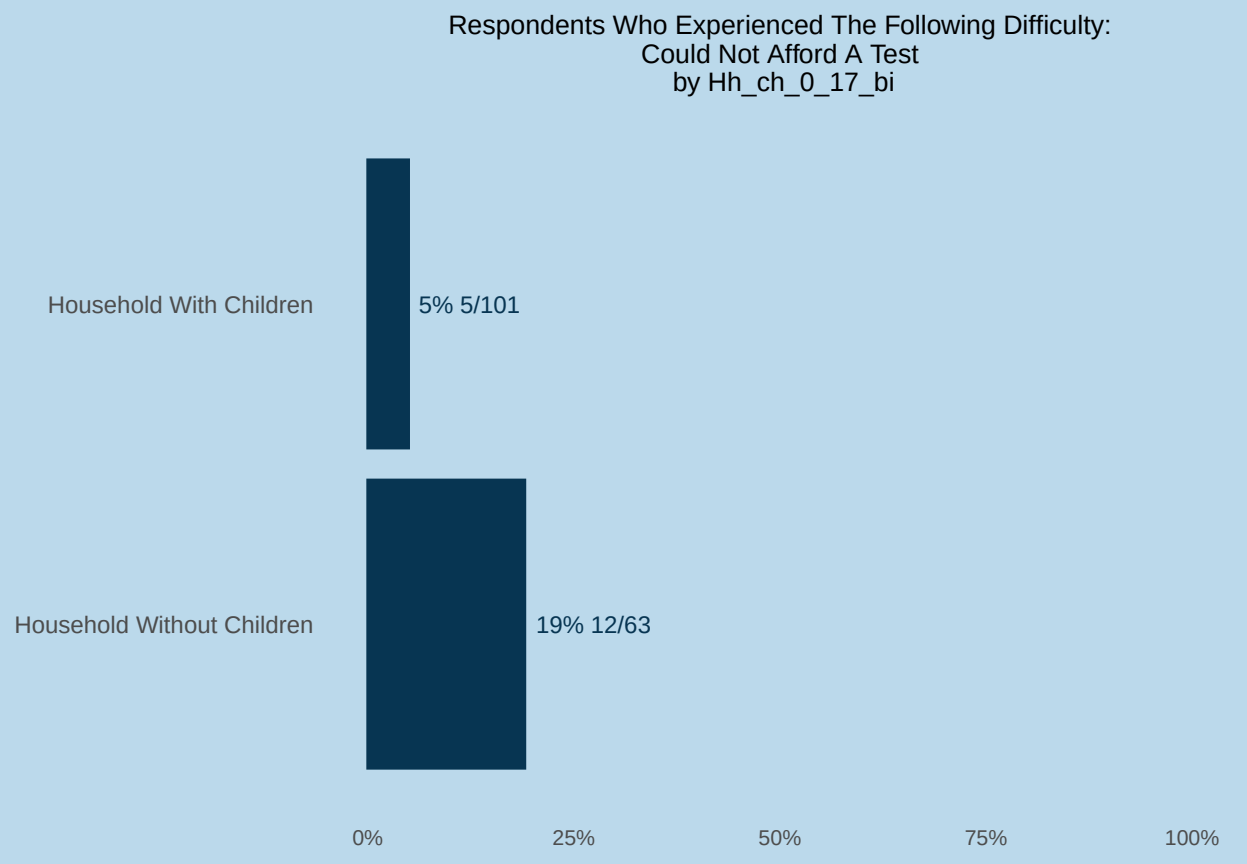
```
##
## [[1]]$inc_dist
## [[1]]$inc_dist$plot
```



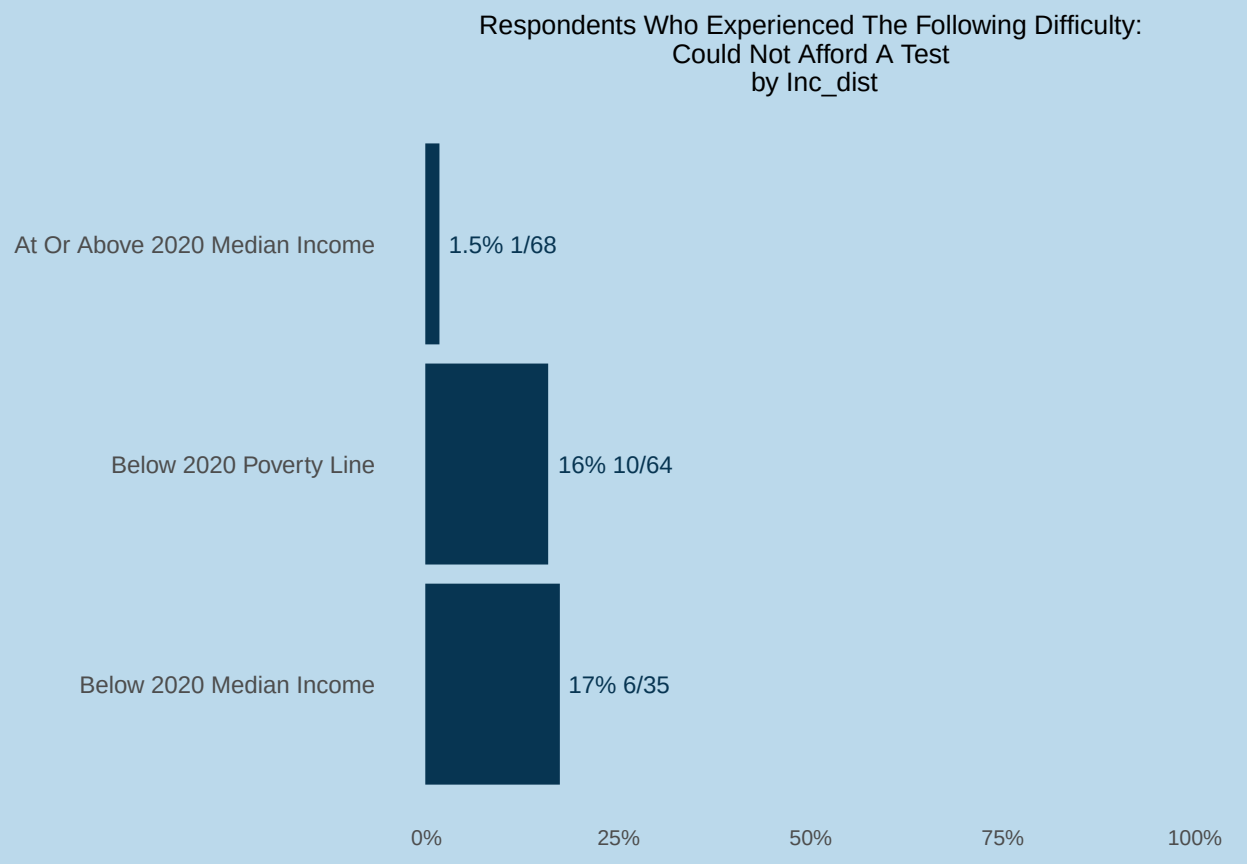

```
##
## [[1]]$inc_dist$p.values
## [[1]]$inc_dist$p.values$test_diffs_close
##                                 below 2020 median income below 2020 poverty line
## below 2020 median income                              NA                      NA
## below 2020 poverty line                               NA                      NA
## at or above 2020 median income                    0.0038                  0.0089
##                                 at or above 2020 median income
## below 2020 median income                                0.0038
## below 2020 poverty line                                 0.0089
## at or above 2020 median income                              NA
##
##
##
##
## [[2]]
## [[2]]$borough
## NULL
##
## [[2]]$gen
## NULL
```

```
##
## [[2]]$race_census
## NULL
##
## [[2]]$hh_ch_0_17_bi
## NULL
##
## [[2]]$hh_sn_65_bi
## NULL
##
## [[2]]$inc_dist
## NULL
##
##
## [[3]]
## [[3]]$borough
## NULL
##
## [[3]]$gen
## NULL
##
## [[3]]$race_census
## NULL
##
## [[3]]$hh_ch_0_17_bi
## NULL
##
## [[3]]$hh_sn_65_bi
## NULL
##
## [[3]]$inc_dist
## NULL
##
##
## [[4]]
## [[4]]$borough
## NULL
##
## [[4]]$gen
## NULL
##
## [[4]]$race_census
## NULL
##
## [[4]]$hh_ch_0_17_bi
## NULL
##
## [[4]]$hh_sn_65_bi
## NULL
##
## [[4]]$inc_dist
## NULL
##
##
```

```
## [[5]]
## [[5]]$borough
## NULL
##
## [[5]]$gen
## NULL
##
## [[5]]$race_census
## NULL
##
## [[5]]$hh_ch_0_17_bi
## NULL
##
## [[5]]$hh_sn_65_bi
## NULL
##
## [[5]]$inc_dist
## NULL
##
##
## [[6]]
## [[6]]$borough
## NULL
##
## [[6]]$gen
## NULL
##
## [[6]]$race_census
## NULL
##
## [[6]]$hh_ch_0_17_bi
## [[6]]$hh_ch_0_17_bi$plot
```




```
##
## [[6]]$hh_ch_0_17_bi$p.values
## [[6]]$hh_ch_0_17_bi$p.values$test_diffs_aff
##                             household with children household without children
## household with children                          NA                      0.0089
## household without children                  0.0089                          NA
##
##
##
## [[6]]$hh_sn_65_bi
## NULL
##
## [[6]]$inc_dist
## [[6]]$inc_dist$plot
```




```
##
## [[6]]$inc_dist$p.values
## [[6]]$inc_dist$p.values$test_diffs_aff
##                                at or above 2020 median income
## at or above 2020 median income                             NA
## below 2020 poverty line                                0.0087
## below 2020 median income                                   NA
##                                below 2020 poverty line below 2020 median income
## at or above 2020 median income                  0.0087                       NA
## below 2020 poverty line                             NA                       NA
## below 2020 median income                            NA                       NA
##
##
##
##
## [[7]]
## [[7]]$borough
## NULL
##
## [[7]]$gen
## NULL
##
## [[7]]$race_census
## NULL
##
## [[7]]$hh_ch_0_17_bi
```

```
## NULL
##
## [[7]]$hh_sn_65_bi
## NULL
##
## [[7]]$inc_dist
## NULL
```

```
cat("Plots with no statistically significant result are omitted from printing. See those marked with 'NU
```

```
## Plots with no statistically significant result are omitted from printing. See those marked with 'NULL
```