gtsummary in quarto

```
library(tidyverse)
library(gtsummary)
nlsy_cols <- c("glasses", "eyesight", "sleep_wkdy", "sleep_wknd",
               "id", "nsibs", "samp", "race_eth", "sex", "region",
               "income", "res_1980", "res_2002", "age_bir")
nlsy <- read_csv(here::here("data", "raw", "nlsy.csv"),
                 na = c("-1", "-2", "-3", "-4", "-5", "-998"),
                 skip = 1, col_names = nlsy_cols) |>
  mutate(region_cat = factor(region, labels = c("Northeast", "North Central", "South", "We
         sex_cat = factor(sex, labels = c("Male", "Female")),
         race_eth_cat = factor(race_eth, labels = c("Hispanic", "Black", "Non-Black, Non-H
         eyesight_cat = factor(eyesight, labels = c("Excellent", "Very good", "Good", "Fai
         glasses_cat = factor(glasses, labels = c("No", "Yes")))
```

Customization of `tbl_summary()`

```
tbl_summary(
  nlsy,
  by = sex_cat,
  include = c(sex_cat, race_eth_cat, region_cat,
              eyesight_cat, glasses, age_bir))
```

```
Table printed with `knitr::kable()`, not {gt}. Learn why at
https://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html
To suppress this message, include `message = FALSE` in code chunk header.
```

Characteristic	**Male**, N = 6,403	**Female**, N = 6,283
race_eth_cat		
Hispanic	1,000 (16%)	1,002 (16%)
Black	1,613 (25%)	1,561 (25%)
Non-Black, Non-Hispanic	3,790 (59%)	3,720 (59%)
region_cat		
Northeast	1,296 (21%)	1,254 (20%)
North Central	1,488 (24%)	1,446 (23%)
South	2,251 (36%)	2,317 (38%)
West	1,253 (20%)	1,142 (19%)
Unknown	115	124
eyesight_cat		
Excellent	1,582 (38%)	1,334 (31%)
Very good	1,470 (35%)	1,500 (35%)
Good	792 (19%)	1,002 (23%)
Fair	267 (6.4%)	365 (8.5%)
Poor	47 (1.1%)	85 (2.0%)
Unknown	2,245	1,997
glasses	1,566 (38%)	2,328 (54%)
Unknown	2,241	1,995
age_bir	25 (21, 29)	22 (19, 27)
Unknown	3,652	3,091

```
tbl_summary(
  nlsy,
  by = sex_cat,
  include = c(sex_cat, race_eth_cat, region_cat,
              eyesight_cat, glasses, age_bir),
  label = list(
    race_eth_cat ~ "Race/ethnicity",
    region_cat ~ "Region",
    eyesight_cat ~ "Eyesight",
    glasses ~ "Wears glasses",
    age_bir ~ "Age at first birth"
  ),
  missing_text = "Missing")
```

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Poor	47 (1.1%)	85 (2.0%)
Missing	2,245	1,997
Wears glasses	1,566 (38%)	2,328 (54%)
Missing	2,241	1,995
Age at first birth	25 (21, 29)	22 (19, 27)
Missing	3,652	3,091

```
tbl_summary(
  nlsy,
  by = sex_cat,
  include = c(sex_cat, race_eth_cat,
              eyesight_cat, glasses, age_bir),
  label = list(
    race_eth_cat ~ "Race/ethnicity",
    eyesight_cat ~ "Eyesight",
    glasses ~ "Wears glasses",
    age_bir ~ "Age at first birth"
  ),
  missing_text = "Missing") |>
  add_p(test = list(all_continuous() ~ "t.test",
                    all_categorical() ~ "chisq.test")) |>
  add_overall(col_label = "**Total**") |>
  bold_labels() |>
  modify_footnote(update = everything() ~ NA) |>
```

```
  modify_header(label = "**Variable**", p.value = "**P**")
```

```
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```

Variable	**Total**	**Male**, N = 6,403	**Female**, N = 6,283	**P**
Race/ethnicity				0.8
Hispanic	2,002 (16%)	1,000 (16%)	1,002 (16%)	
Black	3,174 (25%)	1,613 (25%)	1,561 (25%)	
Non-Black, Non-Hispanic	7,510 (59%)	3,790 (59%)	3,720 (59%)	
Eyesight				<0.001
Excellent	2,916 (35%)	1,582 (38%)	1,334 (31%)	
Very good	2,970 (35%)	1,470 (35%)	1,500 (35%)	
Good	1,794 (21%)	792 (19%)	1,002 (23%)	
Fair	632 (7.5%)	267 (6.4%)	365 (8.5%)	
Poor	132 (1.6%)	47 (1.1%)	85 (2.0%)	
Missing	4,242	2,245	1,997	
Wears glasses	3,894 (46%)	1,566 (38%)	2,328 (54%)	<0.001
Missing	4,236	2,241	1,995	
Age at first birth	23 (20, 28)	25 (21, 29)	22 (19, 27)	<0.001
Missing	6,743	3,652	3,091	

Univariate regression

```
tbl_uvregression(
  nlsy,
  y = income,
  include = c(sex_cat, race_eth_cat,
              eyesight_cat, income, age_bir),
  method = lm)
```

```
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```

Characteristic	N	Beta	95% CI	p-value
age_bir	4,773	595	538, 652	<0.001
sex_cat	10,195			
Male		—	—	
Female		-358	-844, 128	0.15
race_eth_cat	10,195			
Hispanic		—	—	
Black		-1,747	-2,507, -988	<0.001
Non-Black, Non-Hispanic		3,863	3,195, 4,530	<0.001
eyesight_cat	6,789			
Excellent		—	—	
Very good		-578	-1,319, 162	0.13
Good		-1,863	-2,719, -1,006	<0.001
Fair		-4,674	-5,910, -3,439	<0.001
Poor		-6,647	-9,154, -4,140	<0.001

```
tbl_uvregression(
  nlsy,
  y = glasses,
  include = c(sex_cat, race_eth_cat,
              eyesight_cat, glasses, age_bir),
  method = glm,
  method.args = list(family = binomial()),
  exponentiate = TRUE)
```

```
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```

Characteristic	N	OR	95% CI	p-value
age_bir	5,813	1.02	1.01, 1.03	<0.001
sex_cat	8,450			
Male		—	—	
Female		1.97	1.81, 2.15	<0.001
race_eth_cat	8,450			
Hispanic		—	—	
Black		0.76	0.67, 0.86	<0.001
Non-Black, Non-Hispanic		1.34	1.19, 1.50	<0.001
eyesight_cat	8,444			

Characteristic	N	OR	95% CI	p-value
Excellent		—	—	
Very good		0.93	0.84, 1.03	0.2
Good		0.95	0.84, 1.07	0.4
Fair		0.81	0.68, 0.96	0.016
Poor		1.15	0.81, 1.63	0.4

Multivariable regressions

Some regressions

```
linear_model <- lm(income ~ sex_cat + age_bir + race_eth_cat,
                   data = nlsy)
```

```
linear_model_int <- lm(income ~ sex_cat*age_bir + race_eth_cat,
                   data = nlsy)
```

```
logistic_model <- glm(glasses ~ eyesight_cat + sex_cat + income,
                      data = nlsy, family = binomial())
```

Tables

```
tbl_regression(
  linear_model,
  intercept = TRUE,
  label = list(
    sex_cat ~ "Sex",
    race_eth_cat ~ "Race/ethnicity",
    age_bir ~ "Age at first birth"
  ))
```

```
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```

Characteristic	Beta	95% CI	p-value
(Intercept)	2,147	493, 3,802	0.011
Sex			
Male	—	—	
Female	25	-654, 705	>0.9
Age at first birth	438	381, 495	<0.001
Race/ethnicity			
Hispanic	—	—	
Black	-772	-1,714, 171	0.11
Non-Black, Non-Hispanic	7,559	6,676, 8,442	<0.001

```
tbl_regression(
  logistic_model,
  exponentiate = TRUE,
  label = list(
    sex_cat ~ "Sex",
    eyesight_cat ~ "Eyesight",
    income ~ "Income"
  ))
```

```
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```

Characteristic	OR	95% CI	p-value
Eyesight			
Excellent	—	—	
Very good	0.92	0.82, 1.03	0.2
Good	0.92	0.80, 1.05	0.2
Fair	0.80	0.66, 0.98	0.028
Poor	1.03	0.69, 1.53	0.9
Sex			
Male	—	—	
Female	2.04	1.85, 2.25	<0.001
Income	1.00	1.00, 1.00	<0.001

```
tbl_no_int <- tbl_regression(
  linear_model,
```

```
  intercept = TRUE,
  label = list(
    sex_cat ~ "Sex",
    race_eth_cat ~ "Race/ethnicity",
    age_bir ~ "Age at first birth"
  ))

tbl_int <- tbl_regression(
  linear_model_int,
  intercept = TRUE,
  label = list(
    sex_cat ~ "Sex",
    race_eth_cat ~ "Race/ethnicity",
    age_bir ~ "Age at first birth",
    `sex_cat:age_bir` ~ "Sex/age interaction"
  ))
```

```
tbl_merge(list(tbl_no_int, tbl_int),
          tab_spanner = c("**Model 1**", "**Model 2**"))
```

```
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```

Characteristic	**Beta**	**95% CI**	**p-value**	**Beta**	**95% CI**	**p-value**
(Intercept)	2,147	493, 3,802	0.011	4,064	1,884, 6,245	<0.001
Sex						
Male	—	—		—	—	
Female	25	-654, 705	>0.9	-3,635	-6,432, -838	0.011
Age at first birth	438	381, 495	<0.001	364	285, 443	<0.001
Race/ethnicity						
Hispanic	—	—		—	—	
Black	-772	-1,714, 171	0.11	-759	-1,701, 183	0.11
Non-Black, Non-Hispanic	7,559	6,676, 8,442	<0.001	7,550	6,668, 8,433	<0.001
Sex/age interaction						
Female * Age at first birth				149	39, 260	0.008