Exploring the R gtsummary Package to Create Professional-Quality Descriptive Tables for Academic Publications

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Contents

### **Install and read in R packages needed**

library(NHANES)  
library(gtsummary)  
library(gt)  
library(dplyr)

### **Read in the demo data**

data <- NHANES::NHANES

### **Example basic table**

data %>%  
 # Remove the missing data in the diabetes variable for simplicity   
 filter(!is.na(Diabetes)) %>%  
 select(Gender, Age, AgeDecade, Race1, BMI\_WHO, Education, MaritalStatus,  
 HHIncome, Work, Diabetes) %>%  
 tbl\_summary(by = Diabetes,   
 statistic = list(all\_continuous() ~ "{mean} ({sd})",   
 all\_categorical() ~ "{n} ({p}%)")) %>%  
 add\_overall() %>%  
 add\_p() %>% # test for a difference between groups  
 bold\_labels() %>%  
 modify\_header(label = "\*\*Characteristic\*\*") %>% # Update the column header  
 as\_gt() %>%  
 gt::tab\_header("Table: sociodemographic characteristics of patients with and without diabetes.")

Table 1: Table: sociodemographic characteristics of patients with and without diabetes.

| **Characteristic** | **Overall** N = 9,858*1* | **No** N = 9,098*1* | **Yes** N = 760*1* | **p-value***2* |
| --- | --- | --- | --- | --- |
| **Gender** |  |  |  | 0.064 |
| female | 4,949 (50%) | 4,592 (50%) | 357 (47%) |  |
| male | 4,909 (50%) | 4,506 (50%) | 403 (53%) |  |
| **Age** | 37 (22) | 35 (22) | 59 (15) | <0.001 |
| **AgeDecade** |  |  |  | <0.001 |
| 0-9 | 1,254 (13%) | 1,254 (14%) | 0 (0%) |  |
| 10-19 | 1,371 (14%) | 1,354 (15%) | 17 (2.5%) |  |
| 20-29 | 1,356 (14%) | 1,344 (15%) | 12 (1.7%) |  |
| 30-39 | 1,338 (14%) | 1,295 (15%) | 43 (6.2%) |  |
| 40-49 | 1,398 (15%) | 1,302 (15%) | 96 (14%) |  |
| 50-59 | 1,304 (14%) | 1,126 (13%) | 178 (26%) |  |
| 60-69 | 917 (9.6%) | 713 (8.1%) | 204 (30%) |  |
| 70+ | 587 (6.2%) | 447 (5.1%) | 140 (20%) |  |
| Unknown | 333 | 263 | 70 |  |
| **Race1** |  |  |  | <0.001 |
| Black | 1,184 (12%) | 1,053 (12%) | 131 (17%) |  |
| Hispanic | 602 (6.1%) | 555 (6.1%) | 47 (6.2%) |  |
| Mexican | 991 (10%) | 925 (10%) | 66 (8.7%) |  |
| White | 6,290 (64%) | 5,840 (64%) | 450 (59%) |  |
| Other | 791 (8.0%) | 725 (8.0%) | 66 (8.7%) |  |
| **BMI\_WHO** |  |  |  | <0.001 |
| 12.0\_18.5 | 1,277 (13%) | 1,274 (14%) | 3 (0.4%) |  |
| 18.5\_to\_24.9 | 2,908 (30%) | 2,797 (32%) | 111 (15%) |  |
| 25.0\_to\_29.9 | 2,664 (28%) | 2,461 (28%) | 203 (27%) |  |
| 30.0\_plus | 2,749 (29%) | 2,321 (26%) | 428 (57%) |  |
| Unknown | 260 | 245 | 15 |  |
| **Education** |  |  |  | <0.001 |
| 8th Grade | 451 (6.2%) | 351 (5.4%) | 100 (13%) |  |
| 9 - 11th Grade | 886 (12%) | 781 (12%) | 105 (14%) |  |
| High School | 1,517 (21%) | 1,352 (21%) | 165 (22%) |  |
| Some College | 2,267 (31%) | 2,039 (31%) | 228 (31%) |  |
| College Grad | 2,098 (29%) | 1,954 (30%) | 144 (19%) |  |
| Unknown | 2,639 | 2,621 | 18 |  |
| **MaritalStatus** |  |  |  | <0.001 |
| Divorced | 705 (9.8%) | 605 (9.3%) | 100 (13%) |  |
| LivePartner | 560 (7.7%) | 531 (8.2%) | 29 (3.9%) |  |
| Married | 3,945 (55%) | 3,519 (54%) | 426 (57%) |  |
| NeverMarried | 1,380 (19%) | 1,313 (20%) | 67 (9.0%) |  |
| Separated | 183 (2.5%) | 159 (2.5%) | 24 (3.2%) |  |
| Widowed | 456 (6.3%) | 361 (5.6%) | 95 (13%) |  |
| Unknown | 2,629 | 2,610 | 19 |  |
| **HHIncome** |  |  |  | <0.001 |
| 0-4999 | 182 (2.0%) | 169 (2.0%) | 13 (1.9%) |  |
| 5000-9999 | 250 (2.8%) | 223 (2.7%) | 27 (3.9%) |  |
| 10000-14999 | 537 (5.9%) | 472 (5.6%) | 65 (9.3%) |  |
| 15000-19999 | 515 (5.7%) | 461 (5.5%) | 54 (7.8%) |  |
| 20000-24999 | 605 (6.7%) | 546 (6.5%) | 59 (8.5%) |  |
| 25000-34999 | 945 (10%) | 865 (10%) | 80 (11%) |  |
| 35000-44999 | 851 (9.4%) | 765 (9.1%) | 86 (12%) |  |
| 45000-54999 | 776 (8.6%) | 726 (8.7%) | 50 (7.2%) |  |
| 55000-64999 | 615 (6.8%) | 571 (6.8%) | 44 (6.3%) |  |
| 65000-74999 | 521 (5.7%) | 476 (5.7%) | 45 (6.5%) |  |
| 75000-99999 | 1,066 (12%) | 999 (12%) | 67 (9.6%) |  |
| more 99999 | 2,200 (24%) | 2,094 (25%) | 106 (15%) |  |
| Unknown | 795 | 731 | 64 |  |
| **Work** |  |  |  | <0.001 |
| Looking | 311 (4.0%) | 288 (4.1%) | 23 (3.1%) |  |
| NotWorking | 2,845 (37%) | 2,418 (34%) | 427 (57%) |  |
| Working | 4,613 (59%) | 4,319 (61%) | 294 (40%) |  |
| Unknown | 2,089 | 2,073 | 16 |  |
| *1*n (%); Mean (SD) | | | | |
| *2*Pearson's Chi-squared test; Wilcoxon rank sum test | | | | |