Water Treatment Manuscript

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library(tidyverse)

── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
✔ dplyr 1.1.4 ✔ readr 2.1.5  
✔ forcats 1.0.0 ✔ stringr 1.5.1  
✔ ggplot2 3.5.1 ✔ tibble 3.2.1  
✔ lubridate 1.9.4 ✔ tidyr 1.3.1  
✔ purrr 1.0.2   
── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
✖ dplyr::filter() masks stats::filter()  
✖ dplyr::lag() masks stats::lag()  
ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(gtsummary)

df <- read\_csv("/Users/alex/Documents/GitHub/R\_Projects/Cholera\_study\_project\_2024/water\_treatment.csv",show\_col\_types = FALSE)

New names:  
• `` -> `...1`

## Demographics

df |>   
 select("age\_group", "sex", "level\_education", "ethnicity", "religion",   
 "water\_treatment\_category", "health\_risk\_associated\_with\_drinking\_untreated\_water",  
 "treat\_drinking\_water", "difficulties\_accessing\_water\_treatment\_products",  
 "often\_treat\_water", "drinking\_water\_treated", "traditional\_beliefs\_binary") |>   
 tbl\_strata(  
 strata = c(water\_treatment\_category, sex), # Stratify by both variables  
 ~ tbl\_summary(  
 data = .,  
 missing = "no"  
 ) |>   
 add\_ci() )

|  | **Does Not Practice, female** | | **Does Not Practice, male** | | **Practices, female** | | **Practices, male** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characteristic** | **N = 209***1* | **95% CI***2* | **N = 92***1* | **95% CI***2* | **N = 398***1* | **95% CI***2* | **N = 96***1* | **95% CI***2* |
| age\_group |  |  |  |  |  |  |  |  |
| >50 | 44 (21%) | 16%, 27% | 19 (21%) | 13%, 31% | 87 (22%) | 18%, 26% | 24 (25%) | 17%, 35% |
| 18-30 | 83 (40%) | 33%, 47% | 36 (39%) | 29%, 50% | 133 (33%) | 29%, 38% | 37 (39%) | 29%, 49% |
| 31-50 | 82 (39%) | 33%, 46% | 37 (40%) | 30%, 51% | 178 (45%) | 40%, 50% | 35 (36%) | 27%, 47% |
| level\_education |  |  |  |  |  |  |  |  |
| none | 37 (18%) | 13%, 24% | 17 (18%) | 11%, 28% | 47 (12%) | 8.9%, 15% | 7 (7.3%) | 3.2%, 15% |
| primary | 138 (66%) | 59%, 72% | 53 (58%) | 47%, 68% | 257 (65%) | 60%, 69% | 51 (53%) | 43%, 63% |
| secondary | 29 (14%) | 9.6%, 19% | 20 (22%) | 14%, 32% | 89 (22%) | 18%, 27% | 32 (33%) | 24%, 44% |
| tertiary | 5 (2.4%) | 0.88%, 5.8% | 2 (2.2%) | 0.38%, 8.4% | 5 (1.3%) | 0.46%, 3.1% | 6 (6.3%) | 2.6%, 14% |
| ethnicity |  |  |  |  |  |  |  |  |
| chewa | 114 (55%) | 48%, 61% | 47 (51%) | 41%, 62% | 179 (45%) | 40%, 50% | 52 (54%) | 44%, 64% |
| lomwe | 18 (8.6%) | 5.3%, 13% | 7 (7.6%) | 3.4%, 16% | 30 (7.5%) | 5.2%, 11% | 10 (10%) | 5.4%, 19% |
| ngonde | 1 (0.5%) | 0.02%, 3.0% | 1 (1.1%) | 0.06%, 6.8% |  |  | 2 (2.1%) | 0.36%, 8.0% |
| ngoni | 27 (13%) | 8.8%, 18% | 11 (12%) | 6.4%, 21% | 53 (13%) | 10%, 17% | 10 (10%) | 5.4%, 19% |
| nyanja | 5 (2.4%) | 0.88%, 5.8% | 1 (1.1%) | 0.06%, 6.8% | 6 (1.5%) | 0.61%, 3.4% | 2 (2.1%) | 0.36%, 8.0% |
| other\_enthni | 3 (1.4%) | 0.37%, 4.5% |  |  | 5 (1.3%) | 0.46%, 3.1% | 1 (1.0%) | 0.05%, 6.5% |
| tonga | 5 (2.4%) | 0.88%, 5.8% | 5 (5.4%) | 2.0%, 13% | 12 (3.0%) | 1.6%, 5.4% | 2 (2.1%) | 0.36%, 8.0% |
| tumbuka | 3 (1.4%) | 0.37%, 4.5% | 3 (3.3%) | 0.85%, 9.9% | 5 (1.3%) | 0.46%, 3.1% |  |  |
| yao | 33 (16%) | 11%, 22% | 17 (18%) | 11%, 28% | 106 (27%) | 22%, 31% | 16 (17%) | 10%, 26% |
| sena |  |  |  |  | 2 (0.5%) | 0.09%, 2.0% | 1 (1.0%) | 0.05%, 6.5% |
| religion |  |  |  |  |  |  |  |  |
| Christianity | 162 (78%) | 71%, 83% | 71 (77%) | 67%, 85% | 280 (70%) | 66%, 75% | 79 (82%) | 73%, 89% |
| muslim | 37 (18%) | 13%, 24% | 18 (20%) | 12%, 29% | 108 (27%) | 23%, 32% | 16 (17%) | 10%, 26% |
| others\_regligion | 10 (4.8%) | 2.4%, 8.9% | 3 (3.3%) | 0.85%, 9.9% | 10 (2.5%) | 1.3%, 4.7% | 1 (1.0%) | 0.05%, 6.5% |
| health\_risk\_associated\_with\_drinking\_untreated\_water | 171 (82%) | 76%, 87% | 73 (79%) | 69%, 87% | 380 (95%) | 93%, 97% | 92 (96%) | 89%, 99% |
| treat\_drinking\_water | 10 (4.8%) | 2.4%, 8.9% | 3 (3.3%) | 0.85%, 9.9% | 388 (97%) | 95%, 99% | 95 (99%) | 94%, 100% |
| difficulties\_accessing\_water\_treatment\_products | 8 (80%) | 44%, 96% |  |  | 163 (42%) | 37%, 47% | 55 (58%) | 47%, 68% |
| yes |  |  | 3 (100%) | 31%, 100% |  |  |  |  |
| often\_treat\_water |  |  |  |  |  |  |  |  |
| Always | 4 (40%) | 14%, 73% | 1 (33%) | 1.8%, 87% | 224 (58%) | 53%, 63% | 52 (55%) | 44%, 65% |
| donot\_know | 1 (10%) | 0.52%, 46% |  |  | 1 (0.3%) | 0.01%, 1.7% | 1 (1.1%) | 0.05%, 6.6% |
| Sometimes | 5 (50%) | 24%, 76% | 1 (33%) | 1.8%, 87% | 160 (41%) | 36%, 46% | 40 (42%) | 32%, 53% |
| Never |  |  | 1 (33%) | 1.8%, 87% | 3 (0.8%) | 0.20%, 2.4% | 2 (2.1%) | 0.37%, 8.1% |
| drinking\_water\_treated | 10 (4.8%) | 2.4%, 8.9% | 3 (3.3%) | 0.85%, 9.9% | 388 (97%) | 95%, 99% | 95 (99%) | 94%, 100% |
| traditional\_beliefs\_binary | 28 (54%) | 40%, 68% | 7 (50%) | 27%, 73% | 65 (52%) | 43%, 61% | 16 (53%) | 35%, 71% |
| *1*n (%) | | | | | | | | |
| *2*CI = Confidence Interval | | | | | | | | |