Co-epidemic of Tuberculosis Infection and Chronic Diseases

2019-11-08

# Authors

* Trang Quach1, Department of Epidemiology and Biostatistics, The University of Georgia, Athens, GA, USA

1 Corresponding Author: Trang Quach

Address: 101 Buck Rd, Miller Hall, Athens, Georgia 30606

Email: [thq66243@uga.edu](mailto:thq66243@uga.edu)

# Abstract

*Keywords*: Tuberculosis infection; Chronic diseases

# QUESTION FOR DR. HANDEL

In table 3 (multivariate and univariate analysis), I use the finalfit function (from finalfit package) to produce this table.

Let look at variables sex, the odds ratio is 0.75 (Male vs. Female). But when look at the column 3 and 4 (about percentage). I realize that the OR should be >1. I double check the data. The numbers in column 3 and 4 are correct.How can I fix the problem?

Another question is about table 1. I tried package tableone and finalfit package to produce the table 1 about the characteristics of participants. Both packages do not give the format tables that I want (output tables are hard to read).

I also tried another package called table1. This package provide the output table that I want. Howerver, the table is only html output and I cannot have word document. Is there any way to have this table 1 in word? In product, I include ‘ask\_question\_for table 1’ html file which has table 1 in format that I want.

Thank you

# INTRODUCTION

# METHODS

## Data Collection

# RESULTS

Table 1: **Characteristics of participants**

|  |  |
| --- | --- |
|  | Overall |
| n | 3844 |
| Age (mean (SD)) | 48.57 (17.58) |
| Sex = Male (%) | 1922 (50.0) |
| BMI (%) |  |
| Normal weight | 1062 (27.6) |
| Underweight | 69 ( 1.8) |
| Overweight | 1255 (32.6) |
| Obese | 1458 (37.9) |
| Race/Ethnicity (%) |  |
| Whites | 1522 (39.6) |
| Black | 994 (25.9) |
| Asian | 437 (11.4) |
| Mexican American | 393 (10.2) |
| Hispanic | 386 (10.0) |
| Others | 112 ( 2.9) |
| Country of Birth = Yes (%) | 2781 (72.3) |
| Marital Status = Live with partners (%) | 2187 (56.9) |
| Education (%) |  |
| < High school | 868 (22.6) |
| High school | 813 (21.1) |
| Tertiary | 2163 (56.3) |
| Income (%) |  |
| <20,000 | 938 (24.4) |
| 20,000 - <55,000 | 1554 (40.4) |
| 55,000 - <100,000 | 730 (19.0) |
| >= 100,000 | 622 (16.2) |
| Number of household members (%) |  |
| <= 2 | 1729 (45.0) |
| 3 - 5 | 1740 (45.3) |
| >= 6 | 375 ( 9.8) |
| Hypertension = Yes (%) | 1343 (34.9) |
| Diabetes = Yes (%) | 672 (17.5) |
| Heart Diseases = Yes (%) | 390 (10.1) |
| Total Cholesterol = High (%) | 1170 (30.4) |
| HDL = Low (%) | 1673 (43.5) |
| LDL (%) |  |
| Normal | 1290 (33.6) |
| High | 954 (24.8) |
| Unknown | 1600 (41.6) |
| Triglycerid (%) |  |
| Normal | 1350 (35.1) |
| High | 919 (23.9) |
| Unknown | 1575 (41.0) |
| Chronic Kidney Disease (%) |  |
| Stage 1 | 2248 (58.5) |
| Stage 2 | 1314 (34.2) |
| Stage >= 3 | 282 ( 7.3) |
| Hepatitis A = Yes (%) | 1813 (47.2) |
| Other hepatitis = Yes (%) | 134 ( 3.5) |

Table 2: **Characteristics of participants stratified by TB infection status**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dependent: TB\_Infection |  | No | Yes | p |
| Age | Mean (SD) | 48.3 (17.8) | 51.3 (15.6) | 0.001 |
| Sex | Female | 1760 (91.6) | 162 (8.4) | 0.010 |
|  | Male | 1713 (89.1) | 209 (10.9) |  |
| BMI | Normal weight | 952 (89.6) | 110 (10.4) | 0.413 |
|  | Underweight | 60 (87.0) | 9 (13.0) |  |
|  | Overweight | 1131 (90.1) | 124 (9.9) |  |
|  | Obese | 1330 (91.2) | 128 (8.8) |  |
| Race/Ethnicity | Whites | 1499 (98.5) | 23 (1.5) | <0.001 |
|  | Black | 897 (90.2) | 97 (9.8) |  |
|  | Asian | 326 (74.6) | 111 (25.4) |  |
|  | Mexican American | 332 (84.5) | 61 (15.5) |  |
|  | Hispanic | 311 (80.6) | 75 (19.4) |  |
|  | Others | 108 (96.4) | 4 (3.6) |  |
| Country of Birth | No | 796 (74.9) | 267 (25.1) | <0.001 |
|  | Yes | 2677 (96.3) | 104 (3.7) |  |
| Marital Status | Not live with partners | 1523 (91.9) | 134 (8.1) | 0.004 |
|  | Live with partners | 1950 (89.2) | 237 (10.8) |  |
| Education | < High school | 735 (84.7) | 133 (15.3) | <0.001 |
|  | High school | 745 (91.6) | 68 (8.4) |  |
|  | Tertiary | 1993 (92.1) | 170 (7.9) |  |
| Income | <20,000 | 848 (90.4) | 90 (9.6) | 0.446 |
|  | 20,000 - <55,000 | 1392 (89.6) | 162 (10.4) |  |
|  | 55,000 - <100,000 | 662 (90.7) | 68 (9.3) |  |
|  | >= 100,000 | 571 (91.8) | 51 (8.2) |  |
| Number of household members | <= 2 | 1608 (93.0) | 121 (7.0) | <0.001 |
|  | 3 - 5 | 1544 (88.7) | 196 (11.3) |  |
|  | >= 6 | 321 (85.6) | 54 (14.4) |  |
| Hypertension | No | 2258 (90.3) | 243 (9.7) | 0.853 |
|  | Yes | 1215 (90.5) | 128 (9.5) |  |
| Diabetes | No | 2890 (91.1) | 282 (8.9) | 0.001 |
|  | Yes | 583 (86.8) | 89 (13.2) |  |
| Heart Diseases | No | 3119 (90.3) | 335 (9.7) | 0.767 |
|  | Yes | 354 (90.8) | 36 (9.2) |  |
| Total Cholesterol | Normal | 2412 (90.2) | 262 (9.8) | 0.642 |
|  | High | 1061 (90.7) | 109 (9.3) |  |
| HDL | Normal | 1965 (90.5) | 206 (9.5) | 0.697 |
|  | Low | 1508 (90.1) | 165 (9.9) |  |
| LDL | Normal | 1173 (90.9) | 117 (9.1) | 0.436 |
|  | High | 866 (90.8) | 88 (9.2) |  |
|  | Unknown | 1434 (89.6) | 166 (10.4) |  |
| Triglycerid | Normal | 1231 (91.2) | 119 (8.8) | 0.309 |
|  | High | 832 (90.5) | 87 (9.5) |  |
|  | Unknown | 1410 (89.5) | 165 (10.5) |  |
| Chronic Kidney Disease | Stage 1 | 2016 (89.7) | 232 (10.3) | 0.041 |
|  | Stage 2 | 1191 (90.6) | 123 (9.4) |  |
|  | Stage >= 3 | 266 (94.3) | 16 (5.7) |  |
| Hepatitis A | No | 1954 (96.2) | 77 (3.8) | <0.001 |
|  | Yes | 1519 (83.8) | 294 (16.2) |  |
| Other hepatitis | No | 3356 (90.5) | 354 (9.5) | 0.226 |
|  | Yes | 117 (87.3) | 17 (12.7) |  |

Table 3: **Univariate and multivariate analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TB\_Infection |  | No | Yes | OR (univariable) | OR (multivariable) |
| Age | Mean (SD) | 48.3 (17.8) | 51.3 (15.6) | 0.99 (0.98-1.00, p=0.002) | 0.99 (0.98-1.00, p=0.002) |
| Sex | Female | 1760 (50.7) | 162 (43.7) | - | - |
|  | Male | 1713 (49.3) | 209 (56.3) | 0.75 (0.61-0.94, p=0.010) | - |
| BMI | Normal weight | 952 (27.4) | 110 (29.6) | - | - |
|  | Underweight | 60 (1.7) | 9 (2.4) | 0.77 (0.39-1.70, p=0.482) | - |
|  | Overweight | 1131 (32.6) | 124 (33.4) | 1.05 (0.80-1.38, p=0.704) | - |
|  | Obese | 1330 (38.3) | 128 (34.5) | 1.20 (0.92-1.57, p=0.181) | - |
| Race/Ethnicity | Whites | 1499 (43.2) | 23 (6.2) | - | - |
|  | Black | 897 (25.8) | 97 (26.1) | 0.14 (0.09-0.22, p<0.001) | - |
|  | Asian | 326 (9.4) | 111 (29.9) | 0.05 (0.03-0.07, p<0.001) | - |
|  | Mexican American | 332 (9.6) | 61 (16.4) | 0.08 (0.05-0.13, p<0.001) | - |
|  | Hispanic | 311 (9.0) | 75 (20.2) | 0.06 (0.04-0.10, p<0.001) | - |
|  | Others | 108 (3.1) | 4 (1.1) | 0.41 (0.16-1.43, p=0.110) | - |
| Country of Birth | No | 796 (22.9) | 267 (72.0) | - | - |
|  | Yes | 2677 (77.1) | 104 (28.0) | 8.63 (6.81-11.02, p<0.001) | - |
| Marital Status | Not live with partners | 1523 (43.9) | 134 (36.1) | - | - |
|  | Live with partners | 1950 (56.1) | 237 (63.9) | 0.72 (0.58-0.90, p=0.004) | - |
| Education | < High school | 735 (21.2) | 133 (35.8) | - | - |
|  | High school | 745 (21.5) | 68 (18.3) | 1.98 (1.46-2.71, p<0.001) | - |
|  | Tertiary | 1993 (57.4) | 170 (45.8) | 2.12 (1.66-2.70, p<0.001) | - |
| Income | <20,000 | 848 (24.4) | 90 (24.3) | - | - |
|  | 20,000 - <55,000 | 1392 (40.1) | 162 (43.7) | 0.91 (0.69-1.19, p=0.506) | - |
|  | 55,000 - <100,000 | 662 (19.1) | 68 (18.3) | 1.03 (0.74-1.44, p=0.846) | - |
|  | >= 100,000 | 571 (16.4) | 51 (13.7) | 1.19 (0.83-1.71, p=0.347) | - |
| Number of household members | <= 2 | 1608 (46.3) | 121 (32.6) | - | - |
|  | 3 - 5 | 1544 (44.5) | 196 (52.8) | 0.59 (0.47-0.75, p<0.001) | - |
|  | >= 6 | 321 (9.2) | 54 (14.6) | 0.45 (0.32-0.63, p<0.001) | - |
| Hypertension | No | 2258 (65.0) | 243 (65.5) | - | - |
|  | Yes | 1215 (35.0) | 128 (34.5) | 1.02 (0.82-1.28, p=0.853) | - |
| Diabetes | No | 2890 (83.2) | 282 (76.0) | - | - |
|  | Yes | 583 (16.8) | 89 (24.0) | 0.64 (0.50-0.83, p=0.001) | - |
| Heart Diseases | No | 3119 (89.8) | 335 (90.3) | - | - |
|  | Yes | 354 (10.2) | 36 (9.7) | 1.06 (0.75-1.54, p=0.767) | - |
| Total Cholesterol | Normal | 2412 (69.5) | 262 (70.6) | - | - |
|  | High | 1061 (30.5) | 109 (29.4) | 1.06 (0.84-1.34, p=0.642) | - |
| HDL | Normal | 1965 (56.6) | 206 (55.5) | - | - |
|  | Low | 1508 (43.4) | 165 (44.5) | 0.96 (0.77-1.19, p=0.697) | - |
| LDL | Normal | 1173 (33.8) | 117 (31.5) | - | - |
|  | High | 866 (24.9) | 88 (23.7) | 0.98 (0.74-1.31, p=0.900) | - |
|  | Unknown | 1434 (41.3) | 166 (44.7) | 0.86 (0.67-1.10, p=0.241) | - |
| Triglycerid | Normal | 1231 (35.4) | 119 (32.1) | - | - |
|  | High | 832 (24.0) | 87 (23.5) | 0.92 (0.69-1.24, p=0.596) | - |
|  | Unknown | 1410 (40.6) | 165 (44.5) | 0.83 (0.64-1.06, p=0.131) | - |
| Chronic Kidney Disease | Stage 1 | 2016 (58.0) | 232 (62.5) | - | - |
|  | Stage 2 | 1191 (34.3) | 123 (33.2) | 1.11 (0.89-1.41, p=0.356) | - |
|  | Stage >= 3 | 266 (7.7) | 16 (4.3) | 1.91 (1.17-3.35, p=0.015) | - |
| Hepatitis A | No | 1954 (56.3) | 77 (20.8) | - | - |
|  | Yes | 1519 (43.7) | 294 (79.2) | 0.20 (0.16-0.26, p<0.001) | - |
| Other hepatitis | No | 3356 (96.6) | 354 (95.4) | - | - |
|  | Yes | 117 (3.4) | 17 (4.6) | 0.73 (0.44-1.26, p=0.228) | - |