Phan tich mean hand Wilcox test

Minh

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## Load bộ số liệu và các packages

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.3 ✔ readr 2.1.4  
## ✔ forcats 1.0.0 ✔ stringr 1.5.0  
## ✔ ggplot2 3.4.3 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.2 ✔ tidyr 1.3.0  
## ✔ 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  
##   
## Attaching package: 'rstatix'  
##   
##   
## The following object is masked from 'package:stats':  
##   
## filter

## So sánh khác biệt về trung bình của chỉ số 2 tay theo các subgroup

Tạo hàm tính 95%CI

Tạo hàm so sánh trung bình bằng Wilcox.test nếu subgroup có 2 level

Tạo hàm so sánh bắt cặp các trung bình bằng Wilcox.pairwise test nếu group có >2 level

Tạo hàm vẽ Forest plot

Hàm để tạo bảng

Sub group list = “Gender”, “Race”, “Smoking”, “Obesity”, “BMI\_25\_30”, “Stress index”, “Type of skins”, “Hypertension”, “Age\_stage”,

## Tạo bảng và Forest plot với biến M\_mean

|  | Subgroup\_Category | Subgroup | n\_M\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 25.23066 | 22.951082 | 27.51024 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 23.81860 | 18.427889 | 29.20930 | NA |
| 4 | Age\_stage | Age <30 | 26 | 19.41503 | 15.093954 | 23.73611 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 18.30167 | 7.117392 | 29.48594 | NA |
| 30 | Anxiety | 0 | 63 | 21.38829 | 19.064357 | 23.71221 | NA |
| 33 | Anxiety | 1 | 5 | 26.12000 | 11.211142 | 41.02886 | NA |
| 31 | Anxiety | 2 | 5 | 26.16750 | 21.697559 | 30.63744 | NA |
| 34 | Anxiety | 3 | 2 | 30.94875 | -14.809470 | 76.70697 | NA |
| 32 | Anxiety | 4 | 4 | 27.46898 | 17.290166 | 37.64780 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 26.35789 | 23.125619 | 29.59016 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 19.34076 | 16.496402 | 22.18513 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 26.37490 | 23.570361 | 29.17943 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 29.20167 | 24.635204 | 33.76813 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 19.81792 | -98.185666 | 137.82150 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 21.01634 | 18.547665 | 23.48501 | NA |
| 22 | DASS\_21 | STRESS | 4 | 27.47375 | 18.372354 | 36.57515 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 29.70000 | 22.871814 | 36.52819 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 25.20066 | 18.104595 | 32.29672 | NA |
| 1 | Gender | female | 34 | 21.35809 | 18.402465 | 24.31372 | 0.1878680 |
| 2 | Gender | male | 45 | 23.43329 | 20.548402 | 26.31817 | 0.1878680 |
| 35 | Hypertension | No | 58 | 23.59258 | 21.312831 | 25.87233 | 0.1866318 |
| 36 | Hypertension | Yes | 21 | 19.63349 | 15.102313 | 24.16467 | 0.1866318 |
| 40 | Obesity | No | 71 | 22.10808 | 19.862808 | 24.35335 | 0.2726702 |
| 41 | Obesity | Yes | 8 | 26.37490 | 23.570361 | 29.17943 | 0.2726702 |
| 7 | Race | Asian or Asian British | 61 | 21.07010 | 18.630418 | 23.50979 | NA |
| 9 | Race | Black | 3 | 29.87167 | 15.850781 | 43.89255 | NA |
| 8 | Race | White | 15 | 27.05211 | 24.085581 | 30.01864 | NA |
| 18 | Smoking | Non smoker | 65 | 22.84827 | 20.670031 | 25.02651 | 0.9130984 |
| 19 | Smoking | Smoker | 14 | 21.10967 | 14.850255 | 27.36908 | 0.9130984 |
| 26 | Stress | 0 | 62 | 21.37374 | 19.023904 | 23.72358 | NA |
| 27 | Stress | 1 | 10 | 24.95975 | 19.119608 | 30.79989 | NA |
| 28 | Stress | 2 | 3 | 30.04781 | 10.255354 | 49.84027 | NA |
| 29 | Stress | 3 | 4 | 28.94000 | 20.569958 | 37.31004 | NA |
| 16 | Stress index | No | 57 | 21.01634 | 18.547665 | 23.48501 | 0.0161211 |
| 17 | Stress index | Yes | 22 | 26.48826 | 23.156869 | 29.81966 | 0.0161211 |
| 12 | Typer of skins | 1 | 13 | 25.20237 | 22.799807 | 27.60494 | NA |
| 14 | Typer of skins | 2 | 5 | 31.27200 | 25.257861 | 37.28614 | NA |
| 10 | Typer of skins | 3 | 40 | 19.60355 | 16.435905 | 22.77119 | NA |
| 11 | Typer of skins | 4 | 11 | 26.43410 | 23.779655 | 29.08854 | NA |
| 15 | Typer of skins | 5 | 6 | 17.04917 | 3.788464 | 30.30987 | NA |
| 13 | Typer of skins | 6 | 4 | 29.86750 | 22.534428 | 37.20057 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
|  |  |  |  |
| Age\_stage | Age [30-40) | Age <30 | 0.0831089 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.6839356 |
| Age\_stage | Age [30-40) | Age >=50 | 0.2201242 |
| Age\_stage | Age <30 | Age [40-50) | 0.1690260 |
| Age\_stage | Age <30 | Age >=50 | 0.9807390 |
| Age\_stage | Age [40-50) | Age >=50 | 0.3530444 |
| Race | Asian or Asian British | White | 0.0318033 |
| Race | Asian or Asian British | Black | 0.1122592 |
| Race | White | Black | 0.3602941 |
| Typer of skins | 3 | 4 | 0.0426806 |
| Typer of skins | 3 | 1 | 0.0754198 |
| Typer of skins | 3 | 6 | 0.0392338 |
| Typer of skins | 3 | 2 | 0.0088323 |
| Typer of skins | 3 | 5 | 0.5681321 |
| Typer of skins | 4 | 1 | 0.5690834 |
| Typer of skins | 4 | 6 | 0.2256410 |
| Typer of skins | 4 | 2 | 0.1451465 |
| Typer of skins | 4 | 5 | 0.1801875 |
| Typer of skins | 1 | 6 | 0.0445378 |
| Typer of skins | 1 | 2 | 0.0592904 |
| Typer of skins | 1 | 5 | 0.2440660 |
| Typer of skins | 6 | 2 | 1.0000000 |
| Typer of skins | 6 | 5 | 0.1714286 |
| Typer of skins | 2 | 5 | 0.0519481 |
| DASS\_21 | NORMAL | ANXIETY | 0.0575089 |
| DASS\_21 | NORMAL | STRESS | 0.1849399 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.4163229 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0428708 |
| DASS\_21 | NORMAL | DEPRESSION | 0.8834470 |
| DASS\_21 | ANXIETY | STRESS | 0.6285714 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.3727273 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.8571429 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.4000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.9398601 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.6857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.5333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.3300699 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.7272727 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.5333333 |
| Stress | 0 | 1 | 0.3881316 |
| Stress | 0 | 2 | 0.1459876 |
| Stress | 0 | 3 | 0.1159210 |
| Stress | 1 | 2 | 0.3706294 |
| Stress | 1 | 3 | 0.4535465 |
| Stress | 2 | 3 | 1.0000000 |
| Anxiety | 0 | 2 | 0.3656517 |
| Anxiety | 0 | 4 | 0.2958884 |
| Anxiety | 0 | 1 | 0.1656458 |
| Anxiety | 0 | 3 | 0.1239302 |
| Anxiety | 2 | 4 | 0.9047619 |
| Anxiety | 2 | 1 | 0.5476190 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.7301587 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.8571429 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.0013452 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.0370609 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.6407065 |

## Tạo bảng và Forest plot với biến Kv100\_mean

|  | Subgroup\_Category | Subgroup | n\_Kv100\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 19.90264 | 16.2535011 | 23.55179 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 12.29769 | 9.6605674 | 14.93481 | NA |
| 4 | Age\_stage | Age <30 | 26 | 25.59429 | 20.5850815 | 30.60351 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 28.58972 | 10.7716272 | 46.40782 | NA |
| 30 | Anxiety | 0 | 63 | 21.50424 | 18.4752960 | 24.53317 | NA |
| 33 | Anxiety | 1 | 5 | 20.54500 | 0.7191585 | 40.37084 | NA |
| 31 | Anxiety | 2 | 5 | 14.05425 | 4.7711805 | 23.33732 | NA |
| 34 | Anxiety | 3 | 2 | 22.68375 | -7.0328863 | 52.40039 | NA |
| 32 | Anxiety | 4 | 4 | 23.20359 | 4.0320452 | 42.37513 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 17.55254 | 13.0120452 | 22.09303 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 24.03088 | 20.3173592 | 27.74439 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 17.64328 | 12.1152123 | 23.17135 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 9.03000 | 5.0253535 | 13.03465 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 34.64958 | -153.3969525 | 222.69612 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 21.12303 | 17.9396406 | 24.30642 | NA |
| 22 | DASS\_21 | STRESS | 4 | 20.36375 | 10.7198844 | 30.00762 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 15.06875 | 3.7723350 | 26.36517 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 24.86812 | 15.8730042 | 33.86324 | NA |
| 1 | Gender | female | 34 | 24.24387 | 19.4504079 | 29.03732 | 0.0603411 |
| 2 | Gender | male | 45 | 18.70341 | 15.7969971 | 21.60983 | 0.0603411 |
| 35 | Hypertension | No | 58 | 22.49433 | 19.2461585 | 25.74250 | 0.0662656 |
| 36 | Hypertension | Yes | 21 | 17.20351 | 12.8726545 | 21.53437 | 0.0662656 |
| 40 | Obesity | No | 71 | 21.47604 | 18.5731174 | 24.37896 | 0.5750373 |
| 41 | Obesity | Yes | 8 | 17.64328 | 12.1152123 | 23.17135 | 0.5750373 |
| 7 | Race | Asian or Asian British | 61 | 21.42018 | 18.2961183 | 24.54423 | NA |
| 9 | Race | Black | 3 | 16.23667 | -0.1541548 | 32.62749 | NA |
| 8 | Race | White | 15 | 20.70694 | 14.3469523 | 27.06694 | NA |
| 18 | Smoking | Non smoker | 65 | 22.52134 | 19.4428233 | 25.59986 | 0.0204816 |
| 19 | Smoking | Smoker | 14 | 14.43269 | 11.6212868 | 17.24409 | 0.0204816 |
| 26 | Stress | 0 | 62 | 20.97422 | 17.8373330 | 24.11111 | NA |
| 27 | Stress | 1 | 10 | 22.36413 | 14.8995888 | 29.82866 | NA |
| 28 | Stress | 2 | 3 | 19.17229 | -16.7610866 | 55.10566 | NA |
| 29 | Stress | 3 | 4 | 21.09625 | 7.8839503 | 34.30855 | NA |
| 16 | Stress index | No | 57 | 21.12303 | 17.9396406 | 24.30642 | 0.8999099 |
| 17 | Stress index | Yes | 22 | 20.99692 | 15.8049653 | 26.18888 | 0.8999099 |
| 12 | Typer of skins | 1 | 13 | 21.35593 | 13.9659494 | 28.74591 | NA |
| 14 | Typer of skins | 2 | 5 | 14.63700 | 7.0226726 | 22.25133 | NA |
| 10 | Typer of skins | 3 | 40 | 21.12525 | 16.9820641 | 25.26844 | NA |
| 11 | Typer of skins | 4 | 11 | 20.89093 | 15.3323434 | 26.44951 | NA |
| 15 | Typer of skins | 5 | 6 | 30.68708 | 18.6235994 | 42.75057 | NA |
| 13 | Typer of skins | 6 | 4 | 14.05000 | 3.0084534 | 25.09155 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0569137 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0061696 |
| Age\_stage | Age [30-40) | Age >=50 | 0.3493784 |
| Age\_stage | Age <30 | Age [40-50) | 0.0001552 |
| Age\_stage | Age <30 | Age >=50 | 0.7241534 |
| Age\_stage | Age [40-50) | Age >=50 | 0.0256450 |
| Race | Asian or Asian British | White | 0.9687691 |
| Race | Asian or Asian British | Black | 0.5675139 |
| Race | White | Black | 0.6544118 |
| Typer of skins | 3 | 4 | 0.6926749 |
| Typer of skins | 3 | 1 | 0.7361419 |
| Typer of skins | 3 | 6 | 0.3108780 |
| Typer of skins | 3 | 2 | 0.4490526 |
| Typer of skins | 3 | 5 | 0.0695713 |
| Typer of skins | 4 | 1 | 0.7329601 |
| Typer of skins | 4 | 6 | 0.1377289 |
| Typer of skins | 4 | 2 | 0.1149267 |
| Typer of skins | 4 | 5 | 0.0982547 |
| Typer of skins | 1 | 6 | 0.2016807 |
| Typer of skins | 1 | 2 | 0.3359010 |
| Typer of skins | 1 | 5 | 0.1273773 |
| Typer of skins | 6 | 2 | 1.0000000 |
| Typer of skins | 6 | 5 | 0.1142857 |
| Typer of skins | 2 | 5 | 0.0822511 |
| DASS\_21 | NORMAL | ANXIETY | 0.0326125 |
| DASS\_21 | NORMAL | STRESS | 0.7375783 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.2622437 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.4229955 |
| DASS\_21 | NORMAL | DEPRESSION | 0.2014242 |
| DASS\_21 | ANXIETY | STRESS | 0.0571429 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.0636364 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.4000000 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.6041958 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.2000000 |
| DASS\_21 | STRESS | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.1986014 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.5818182 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.5333333 |
| Stress | 0 | 1 | 0.4109122 |
| Stress | 0 | 2 | 0.7191832 |
| Stress | 0 | 3 | 0.6190739 |
| Stress | 1 | 2 | 0.5734266 |
| Stress | 1 | 3 | 0.9450549 |
| Stress | 2 | 3 | 0.8571429 |
| Anxiety | 0 | 2 | 0.1656499 |
| Anxiety | 0 | 4 | 0.6432933 |
| Anxiety | 0 | 1 | 0.6383991 |
| Anxiety | 0 | 3 | 0.5559979 |
| Anxiety | 2 | 4 | 0.4126984 |
| Anxiety | 2 | 1 | 0.5476190 |
| Anxiety | 2 | 3 | 0.1904762 |
| Anxiety | 4 | 1 | 0.9047619 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.5714286 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.0088580 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.1773118 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.5129149 |

## Tạo bảng và Forest plot với biến δ\_mean

|  | Subgroup\_Category | Subgroup | n\_δ\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 4.463261 | 3.8386680 | 5.087854 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 2.806345 | 1.9337929 | 3.678898 | NA |
| 4 | Age\_stage | Age <30 | 26 | 3.871474 | 3.1760600 | 4.566889 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 4.250000 | 1.6980608 | 6.801939 | NA |
| 30 | Anxiety | 0 | 63 | 3.793460 | 3.3486210 | 4.238300 | NA |
| 33 | Anxiety | 1 | 5 | 3.951000 | 2.2495159 | 5.652484 | NA |
| 31 | Anxiety | 2 | 5 | 3.441500 | 1.7572771 | 5.125723 | NA |
| 34 | Anxiety | 3 | 2 | 7.001250 | -5.0537617 | 19.056262 | NA |
| 32 | Anxiety | 4 | 4 | 5.695446 | 1.9509554 | 9.439937 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 3.869468 | 3.1982181 | 4.540719 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 3.959798 | 3.3482640 | 4.571333 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 4.264792 | 3.1417748 | 5.387809 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 2.641667 | 1.8980487 | 3.385285 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 5.326667 | -0.5605415 | 11.213875 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 3.636880 | 3.1688049 | 4.104955 | NA |
| 22 | DASS\_21 | STRESS | 4 | 5.258125 | 3.4094523 | 7.106798 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 4.656250 | 0.6284675 | 8.684033 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 5.244087 | 3.9188290 | 6.569346 | NA |
| 1 | Gender | female | 34 | 4.159636 | 3.5364417 | 4.782830 | 0.3363251 |
| 2 | Gender | male | 45 | 3.806826 | 3.2472029 | 4.366449 | 0.3363251 |
| 35 | Hypertension | No | 58 | 4.408200 | 3.9375013 | 4.878899 | 0.0001260 |
| 36 | Hypertension | Yes | 21 | 2.717103 | 2.1271620 | 3.307044 | 0.0001260 |
| 40 | Obesity | No | 71 | 3.924175 | 3.4796557 | 4.368695 | 0.5000551 |
| 41 | Obesity | Yes | 8 | 4.264792 | 3.1417748 | 5.387809 | 0.5000551 |
| 7 | Race | Asian or Asian British | 61 | 3.647510 | 3.1975694 | 4.097451 | NA |
| 9 | Race | Black | 3 | 4.826667 | -1.0839935 | 10.737327 | NA |
| 8 | Race | White | 15 | 5.050444 | 4.1404921 | 5.960397 | NA |
| 18 | Smoking | Non smoker | 65 | 4.175707 | 3.7457232 | 4.605691 | 0.0191251 |
| 19 | Smoking | Smoker | 14 | 2.950988 | 1.8146314 | 4.087345 | 0.0191251 |
| 26 | Stress | 0 | 62 | 3.643234 | 3.2027025 | 4.083765 | NA |
| 27 | Stress | 1 | 10 | 4.875000 | 3.7674266 | 5.982573 | NA |
| 28 | Stress | 2 | 3 | 4.848095 | -0.9906251 | 10.686815 | NA |
| 29 | Stress | 3 | 4 | 5.890000 | 2.6668123 | 9.113188 | NA |
| 16 | Stress index | No | 57 | 3.636880 | 3.1688049 | 4.104955 | 0.0072524 |
| 17 | Stress index | Yes | 22 | 4.792392 | 4.0130370 | 5.571747 | 0.0072524 |
| 12 | Typer of skins | 1 | 13 | 4.759551 | 3.8298493 | 5.689253 | NA |
| 14 | Typer of skins | 2 | 5 | 5.104000 | 2.5187159 | 7.689284 | NA |
| 10 | Typer of skins | 3 | 40 | 3.212929 | 2.7428353 | 3.683023 | NA |
| 11 | Typer of skins | 4 | 11 | 4.953723 | 3.8702715 | 6.037174 | NA |
| 15 | Typer of skins | 5 | 6 | 4.272917 | 1.3387716 | 7.207062 | NA |
| 13 | Typer of skins | 6 | 4 | 4.173750 | 0.4489826 | 7.898517 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.1682932 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0023116 |
| Age\_stage | Age [30-40) | Age >=50 | 0.9244782 |
| Age\_stage | Age <30 | Age [40-50) | 0.0586959 |
| Age\_stage | Age <30 | Age >=50 | 0.8323953 |
| Age\_stage | Age [40-50) | Age >=50 | 0.1528380 |
| Race | Asian or Asian British | White | 0.0046257 |
| Race | Asian or Asian British | Black | 0.3248092 |
| Race | White | Black | 0.7377451 |
| Typer of skins | 3 | 4 | 0.0036236 |
| Typer of skins | 3 | 1 | 0.0026630 |
| Typer of skins | 3 | 6 | 0.5410936 |
| Typer of skins | 3 | 2 | 0.0348596 |
| Typer of skins | 3 | 5 | 0.5342012 |
| Typer of skins | 4 | 1 | 0.8646168 |
| Typer of skins | 4 | 6 | 0.4893773 |
| Typer of skins | 4 | 2 | 0.9130037 |
| Typer of skins | 4 | 5 | 0.3501939 |
| Typer of skins | 1 | 6 | 0.4773109 |
| Typer of skins | 1 | 2 | 0.7028478 |
| Typer of skins | 1 | 5 | 0.2440660 |
| Typer of skins | 6 | 2 | 0.5555556 |
| Typer of skins | 6 | 5 | 0.9142857 |
| Typer of skins | 2 | 5 | 0.3290043 |
| DASS\_21 | NORMAL | ANXIETY | 0.4353265 |
| DASS\_21 | NORMAL | STRESS | 0.0492215 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.0136468 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.3587348 |
| DASS\_21 | NORMAL | DEPRESSION | 0.1263099 |
| DASS\_21 | ANXIETY | STRESS | 0.0571429 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.0636364 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.4000000 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.8251748 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.8857143 |
| DASS\_21 | STRESS | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.7104895 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9090909 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8000000 |
| Stress | 0 | 1 | 0.0251620 |
| Stress | 0 | 2 | 0.3246948 |
| Stress | 0 | 3 | 0.0285093 |
| Stress | 1 | 2 | 0.9370629 |
| Stress | 1 | 3 | 0.3036963 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.7779719 |
| Anxiety | 0 | 4 | 0.0878498 |
| Anxiety | 0 | 1 | 0.5569198 |
| Anxiety | 0 | 3 | 0.0384258 |
| Anxiety | 2 | 4 | 0.2857143 |
| Anxiety | 2 | 1 | 0.4206349 |
| Anxiety | 2 | 3 | 0.0952381 |
| Anxiety | 4 | 1 | 0.2857143 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.0952381 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.7656678 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.6748524 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.3583145 |

## Tạo bảng và Forest plot với biến T\_mean

|  | Subgroup\_Category | Subgroup | n\_T\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 32.21173 | 31.27879 | 33.14468 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 31.66737 | 28.90384 | 34.43090 | NA |
| 4 | Age\_stage | Age <30 | 26 | 30.52529 | 29.00575 | 32.04483 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 29.58194 | 24.20772 | 34.95617 | NA |
| 30 | Anxiety | 0 | 63 | 30.82449 | 29.85284 | 31.79615 | NA |
| 33 | Anxiety | 1 | 5 | 32.84000 | 29.76532 | 35.91468 | NA |
| 31 | Anxiety | 2 | 5 | 34.39875 | 32.88407 | 35.91343 | NA |
| 34 | Anxiety | 3 | 2 | 32.89375 | 12.61147 | 53.17603 | NA |
| 32 | Anxiety | 4 | 4 | 33.38879 | 30.22786 | 36.54971 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 32.39200 | 31.14919 | 33.63481 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 30.26352 | 29.05781 | 31.46923 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 33.64651 | 32.18871 | 35.10431 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 34.41333 | 30.61487 | 38.21180 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 33.01000 | 10.26589 | 55.75411 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 30.64620 | 29.58548 | 31.70691 | NA |
| 22 | DASS\_21 | STRESS | 4 | 32.27250 | 31.04694 | 33.49806 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 34.19125 | 31.58687 | 36.79563 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 32.83682 | 31.26785 | 34.40580 | NA |
| 1 | Gender | female | 34 | 31.74163 | 30.66615 | 32.81712 | 1.0000000 |
| 2 | Gender | male | 45 | 31.07253 | 29.83676 | 32.30830 | 1.0000000 |
| 35 | Hypertension | No | 58 | 31.79208 | 30.95194 | 32.63223 | 0.3716739 |
| 36 | Hypertension | Yes | 21 | 30.16851 | 28.02364 | 32.31339 | 0.3716739 |
| 40 | Obesity | No | 71 | 31.10292 | 30.20881 | 31.99703 | 0.0699938 |
| 41 | Obesity | Yes | 8 | 33.64651 | 32.18871 | 35.10431 | 0.0699938 |
| 7 | Race | Asian or Asian British | 61 | 30.78218 | 29.78500 | 31.77935 | NA |
| 9 | Race | Black | 3 | 34.38167 | 31.53377 | 37.22956 | NA |
| 8 | Race | White | 15 | 33.10811 | 31.95357 | 34.26266 | NA |
| 18 | Smoking | Non smoker | 65 | 31.66356 | 30.85425 | 32.47287 | 0.4526101 |
| 19 | Smoking | Smoker | 14 | 29.95344 | 26.95657 | 32.95031 | 0.4526101 |
| 26 | Stress | 0 | 62 | 30.90473 | 29.89958 | 31.90988 | NA |
| 27 | Stress | 1 | 10 | 32.84338 | 31.50169 | 34.18506 | NA |
| 28 | Stress | 2 | 3 | 33.91838 | 29.90444 | 37.93232 | NA |
| 29 | Stress | 3 | 4 | 32.79937 | 29.70267 | 35.89608 | NA |
| 16 | Stress index | No | 57 | 30.64620 | 29.58548 | 31.70691 | 0.0184274 |
| 17 | Stress index | Yes | 22 | 33.21120 | 32.41762 | 34.00478 | 0.0184274 |
| 12 | Typer of skins | 1 | 13 | 33.02080 | 31.68484 | 34.35676 | NA |
| 14 | Typer of skins | 2 | 5 | 33.48900 | 30.21092 | 36.76708 | NA |
| 10 | Typer of skins | 3 | 40 | 30.20477 | 28.91238 | 31.49716 | NA |
| 11 | Typer of skins | 4 | 11 | 33.15895 | 32.25833 | 34.05957 | NA |
| 15 | Typer of skins | 5 | 6 | 28.15083 | 24.32469 | 31.97698 | NA |
| 13 | Typer of skins | 6 | 4 | 34.73000 | 32.87327 | 36.58673 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0726536 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.3874213 |
| Age\_stage | Age [30-40) | Age >=50 | 0.3493784 |
| Age\_stage | Age <30 | Age [40-50) | 0.1538800 |
| Age\_stage | Age <30 | Age >=50 | 0.6546560 |
| Age\_stage | Age [40-50) | Age >=50 | 0.6015480 |
| Race | Asian or Asian British | White | 0.0283418 |
| Race | Asian or Asian British | Black | 0.0566862 |
| Race | White | Black | 0.3014706 |
| Typer of skins | 3 | 4 | 0.0391518 |
| Typer of skins | 3 | 1 | 0.0187088 |
| Typer of skins | 3 | 6 | 0.0052891 |
| Typer of skins | 3 | 2 | 0.0614999 |
| Typer of skins | 3 | 5 | 0.2031633 |
| Typer of skins | 4 | 1 | 0.8201386 |
| Typer of skins | 4 | 6 | 0.0776557 |
| Typer of skins | 4 | 2 | 0.5833333 |
| Typer of skins | 4 | 5 | 0.0030705 |
| Typer of skins | 1 | 6 | 0.1302521 |
| Typer of skins | 1 | 2 | 0.6330532 |
| Typer of skins | 1 | 5 | 0.0047177 |
| Typer of skins | 6 | 2 | 0.7301587 |
| Typer of skins | 6 | 5 | 0.0095238 |
| Typer of skins | 2 | 5 | 0.0303030 |
| DASS\_21 | NORMAL | ANXIETY | 0.0722336 |
| DASS\_21 | NORMAL | STRESS | 0.8497927 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.1725646 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0602089 |
| DASS\_21 | NORMAL | DEPRESSION | 0.4894971 |
| DASS\_21 | ANXIETY | STRESS | 0.1142857 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.4818182 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.8571429 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.4000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.6041958 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.2000000 |
| DASS\_21 | STRESS | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.2601399 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8000000 |
| Stress | 0 | 1 | 0.2788897 |
| Stress | 0 | 2 | 0.1738175 |
| Stress | 0 | 3 | 0.5102776 |
| Stress | 1 | 2 | 0.5734266 |
| Stress | 1 | 3 | 0.8391608 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.0165441 |
| Anxiety | 0 | 4 | 0.1993358 |
| Anxiety | 0 | 1 | 0.3237062 |
| Anxiety | 0 | 3 | 0.5817643 |
| Anxiety | 2 | 4 | 0.5555556 |
| Anxiety | 2 | 1 | 0.3095238 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.7301587 |
| Anxiety | 4 | 3 | 1.0000000 |
| Anxiety | 1 | 3 | 1.0000000 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.0076626 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.0197723 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.3993173 |

## Tạo bảng và Forest plot với biến A365\_mean

|  | Subgroup\_Category | Subgroup | n\_A365\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 95.87706 | 84.966623 | 106.78749 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 77.10714 | 52.897301 | 101.31698 | NA |
| 4 | Age\_stage | Age <30 | 26 | 81.03205 | 63.109377 | 98.95473 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 84.80556 | 50.545876 | 119.06523 | NA |
| 30 | Anxiety | 0 | 63 | 86.60979 | 77.398916 | 95.82066 | NA |
| 33 | Anxiety | 1 | 5 | 95.90000 | 50.035261 | 141.76474 | NA |
| 31 | Anxiety | 2 | 5 | 93.05000 | 57.206427 | 128.89357 | NA |
| 34 | Anxiety | 3 | 2 | 132.87500 | -192.721496 | 458.47150 | NA |
| 32 | Anxiety | 4 | 4 | 48.04821 | -37.782081 | 133.87851 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 84.96522 | 71.440980 | 98.48946 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 85.66667 | 72.546659 | 98.78667 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 99.55208 | 85.415946 | 113.68822 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 74.66667 | -16.887655 | 166.22099 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 100.79167 | 28.260415 | 173.32292 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 85.43129 | 75.637978 | 95.22459 | NA |
| 22 | DASS\_21 | STRESS | 4 | 96.31250 | 26.827033 | 165.79797 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 104.00000 | 28.437840 | 179.56216 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 84.74365 | 47.729635 | 121.75767 | NA |
| 1 | Gender | female | 34 | 86.67724 | 73.113831 | 100.24065 | 0.9447406 |
| 2 | Gender | male | 45 | 86.93519 | 75.588569 | 98.28180 | 0.9447406 |
| 35 | Hypertension | No | 58 | 85.27775 | 74.928696 | 95.62680 | 0.4571462 |
| 36 | Hypertension | Yes | 21 | 91.09524 | 75.391295 | 106.79918 | 0.4571462 |
| 40 | Obesity | No | 71 | 85.39004 | 76.041921 | 94.73816 | 0.4846741 |
| 41 | Obesity | Yes | 8 | 99.55208 | 85.415946 | 113.68822 | 0.4846741 |
| 7 | Race | Asian or Asian British | 61 | 86.11245 | 76.523937 | 95.70097 | NA |
| 9 | Race | Black | 3 | 18.83333 | -18.600844 | 56.26751 | NA |
| 8 | Race | White | 15 | 103.31667 | 88.445624 | 118.18771 | NA |
| 18 | Smoking | Non smoker | 65 | 87.03245 | 78.025841 | 96.03907 | 0.8523118 |
| 19 | Smoking | Smoker | 14 | 85.85714 | 59.033764 | 112.68052 | 0.8523118 |
| 26 | Stress | 0 | 62 | 85.40591 | 76.215577 | 94.59625 | NA |
| 27 | Stress | 1 | 10 | 87.55000 | 55.976583 | 119.12342 | NA |
| 28 | Stress | 2 | 3 | 64.98095 | -77.336533 | 207.29844 | NA |
| 29 | Stress | 3 | 4 | 123.37500 | 85.080123 | 161.66988 | NA |
| 16 | Stress index | No | 57 | 85.43129 | 75.637978 | 95.22459 | 0.7059216 |
| 17 | Stress index | Yes | 22 | 90.43301 | 72.089887 | 108.77613 | 0.7059216 |
| 12 | Typer of skins | 1 | 13 | 101.56410 | 87.641230 | 115.48697 | NA |
| 14 | Typer of skins | 2 | 5 | 90.70000 | 22.551704 | 158.84830 | NA |
| 10 | Typer of skins | 3 | 40 | 94.44375 | 84.879327 | 104.00817 | NA |
| 11 | Typer of skins | 4 | 11 | 95.18420 | 72.462621 | 117.90578 | NA |
| 15 | Typer of skins | 5 | 6 | 33.66667 | 6.190953 | 61.14238 | NA |
| 13 | Typer of skins | 6 | 4 | 14.62500 | -9.095925 | 38.34592 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.3438253 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.2691536 |
| Age\_stage | Age [30-40) | Age >=50 | 0.6901766 |
| Age\_stage | Age <30 | Age [40-50) | 0.8205324 |
| Age\_stage | Age <30 | Age >=50 | 0.9437890 |
| Age\_stage | Age [40-50) | Age >=50 | 0.8411249 |
| Race | Asian or Asian British | White | 0.1438121 |
| Race | Asian or Asian British | Black | 0.0157774 |
| Race | White | Black | 0.0024510 |
| Typer of skins | 3 | 4 | 0.7398131 |
| Typer of skins | 3 | 1 | 0.4443058 |
| Typer of skins | 3 | 6 | 0.0020520 |
| Typer of skins | 3 | 2 | 1.0000000 |
| Typer of skins | 3 | 5 | 0.0009301 |
| Typer of skins | 4 | 1 | 0.3388859 |
| Typer of skins | 4 | 6 | 0.0049617 |
| Typer of skins | 4 | 2 | 0.7337700 |
| Typer of skins | 4 | 5 | 0.0056827 |
| Typer of skins | 1 | 6 | 0.0008403 |
| Typer of skins | 1 | 2 | 0.6330532 |
| Typer of skins | 1 | 5 | 0.0005160 |
| Typer of skins | 6 | 2 | 0.0634921 |
| Typer of skins | 6 | 5 | 0.2571429 |
| Typer of skins | 2 | 5 | 0.1255411 |
| DASS\_21 | NORMAL | ANXIETY | 0.5873261 |
| DASS\_21 | NORMAL | STRESS | 0.9535292 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.7507434 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.4145819 |
| DASS\_21 | NORMAL | DEPRESSION | 0.7534004 |
| DASS\_21 | ANXIETY | STRESS | 1.0000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.3727273 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.4000000 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.4000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.8251748 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.8857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.5333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.6041958 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.5818182 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 1.0000000 |
| Stress | 0 | 1 | 0.9610382 |
| Stress | 0 | 2 | 0.4252773 |
| Stress | 0 | 3 | 0.0438384 |
| Stress | 1 | 2 | 0.5734266 |
| Stress | 1 | 3 | 0.2397602 |
| Stress | 2 | 3 | 0.2285714 |
| Anxiety | 0 | 2 | 0.7069403 |
| Anxiety | 0 | 4 | 0.1153452 |
| Anxiety | 0 | 1 | 0.3910656 |
| Anxiety | 0 | 3 | 0.1334687 |
| Anxiety | 2 | 4 | 0.1904762 |
| Anxiety | 2 | 1 | 0.5476190 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.1111111 |
| Anxiety | 4 | 3 | 0.2666667 |
| Anxiety | 1 | 3 | 0.5714286 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.6087759 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.7265835 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.2697579 |

## Tạo bảng và Forest plot với biến A460\_mean

|  | Subgroup\_Category | Subgroup | n\_A460\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 62.77367 | 56.057002 | 69.49033 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 65.74048 | 48.300099 | 83.18085 | NA |
| 4 | Age\_stage | Age <30 | 26 | 51.74679 | 42.642301 | 60.85129 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 57.83333 | 26.903553 | 88.76311 | NA |
| 30 | Anxiety | 0 | 63 | 61.00317 | 55.038980 | 66.96737 | NA |
| 33 | Anxiety | 1 | 5 | 45.30000 | 21.160889 | 69.43911 | NA |
| 31 | Anxiety | 2 | 5 | 67.35000 | 58.048909 | 76.65109 | NA |
| 34 | Anxiety | 3 | 2 | 63.75000 | -15.663780 | 143.16378 | NA |
| 32 | Anxiety | 4 | 4 | 37.59107 | -11.596402 | 86.77854 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 58.54277 | 51.574542 | 65.51100 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 59.07829 | 50.562886 | 67.59370 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 63.09375 | 49.480472 | 76.70703 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 54.33333 | -30.321959 | 138.98863 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 59.20833 | -102.266352 | 220.68302 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 60.64094 | 54.266134 | 67.01574 | NA |
| 22 | DASS\_21 | STRESS | 4 | 67.06250 | 26.356029 | 107.76897 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 53.87500 | 35.542813 | 72.20719 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 51.40159 | 33.301811 | 69.50136 | NA |
| 1 | Gender | female | 34 | 58.40532 | 51.246258 | 65.56439 | 0.9093339 |
| 2 | Gender | male | 45 | 59.96741 | 52.264562 | 67.67025 | 0.9093339 |
| 35 | Hypertension | No | 58 | 54.31720 | 48.933295 | 59.70111 | 0.0017165 |
| 36 | Hypertension | Yes | 21 | 73.04365 | 61.191586 | 84.89572 | 0.0017165 |
| 40 | Obesity | No | 71 | 58.86710 | 53.147123 | 64.58708 | 0.5749977 |
| 41 | Obesity | Yes | 8 | 63.09375 | 49.480472 | 76.70703 | 0.5749977 |
| 7 | Race | Asian or Asian British | 61 | 61.92592 | 55.791023 | 68.06081 | NA |
| 9 | Race | Black | 3 | 14.00000 | 7.427589 | 20.57241 | NA |
| 8 | Race | White | 15 | 57.65556 | 51.367696 | 63.94341 | NA |
| 18 | Smoking | Non smoker | 65 | 57.85304 | 52.893337 | 62.81274 | 0.3896294 |
| 19 | Smoking | Smoker | 14 | 65.99048 | 45.445208 | 86.53574 | 0.3896294 |
| 26 | Stress | 0 | 62 | 60.28952 | 54.199010 | 66.38002 | NA |
| 27 | Stress | 1 | 10 | 55.95000 | 38.988681 | 72.91132 | NA |
| 28 | Stress | 2 | 3 | 42.37143 | -21.998061 | 106.74092 | NA |
| 29 | Stress | 3 | 4 | 64.93750 | 51.441874 | 78.43313 | NA |
| 16 | Stress index | No | 57 | 60.64094 | 54.266134 | 67.01574 | 0.6225678 |
| 17 | Stress index | Yes | 22 | 55.80823 | 46.051660 | 65.56479 | 0.6225678 |
| 12 | Typer of skins | 1 | 13 | 59.14744 | 53.210686 | 65.08419 | NA |
| 14 | Typer of skins | 2 | 5 | 53.20000 | 31.929821 | 74.47018 | NA |
| 10 | Typer of skins | 3 | 40 | 69.09875 | 62.521005 | 75.67649 | NA |
| 11 | Typer of skins | 4 | 11 | 60.33615 | 45.696477 | 74.97582 | NA |
| 15 | Typer of skins | 5 | 6 | 27.79167 | 13.127313 | 42.45602 | NA |
| 13 | Typer of skins | 6 | 4 | 13.75000 | 10.221692 | 17.27831 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0930380 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.6086799 |
| Age\_stage | Age [30-40) | Age >=50 | 0.4834335 |
| Age\_stage | Age <30 | Age [40-50) | 0.0971015 |
| Age\_stage | Age <30 | Age >=50 | 0.7905541 |
| Age\_stage | Age [40-50) | Age >=50 | 0.2315445 |
| Race | Asian or Asian British | White | 0.4849927 |
| Race | Asian or Asian British | Black | 0.0057143 |
| Race | White | Black | 0.0024510 |
| Typer of skins | 3 | 4 | 0.1877550 |
| Typer of skins | 3 | 1 | 0.0880029 |
| Typer of skins | 3 | 6 | 0.0011656 |
| Typer of skins | 3 | 2 | 0.1202452 |
| Typer of skins | 3 | 5 | 0.0002417 |
| Typer of skins | 4 | 1 | 0.8646168 |
| Typer of skins | 4 | 6 | 0.0014652 |
| Typer of skins | 4 | 2 | 0.7426740 |
| Typer of skins | 4 | 5 | 0.0071105 |
| Typer of skins | 1 | 6 | 0.0008403 |
| Typer of skins | 1 | 2 | 0.5662932 |
| Typer of skins | 1 | 5 | 0.0005160 |
| Typer of skins | 6 | 2 | 0.0158730 |
| Typer of skins | 6 | 5 | 0.0666667 |
| Typer of skins | 2 | 5 | 0.0519481 |
| DASS\_21 | NORMAL | ANXIETY | 0.9459060 |
| DASS\_21 | NORMAL | STRESS | 0.7265644 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.5190986 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.5026940 |
| DASS\_21 | NORMAL | DEPRESSION | 0.9498932 |
| DASS\_21 | ANXIETY | STRESS | 1.0000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.3727273 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.6285714 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.6041958 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.3428571 |
| DASS\_21 | STRESS | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9090909 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8000000 |
| Stress | 0 | 1 | 0.5306759 |
| Stress | 0 | 2 | 0.2409454 |
| Stress | 0 | 3 | 0.5724575 |
| Stress | 1 | 2 | 0.4685315 |
| Stress | 1 | 3 | 0.3036963 |
| Stress | 2 | 3 | 0.2285714 |
| Anxiety | 0 | 2 | 0.3179055 |
| Anxiety | 0 | 4 | 0.1491786 |
| Anxiety | 0 | 1 | 0.1451116 |
| Anxiety | 0 | 3 | 0.7323949 |
| Anxiety | 2 | 4 | 0.1904762 |
| Anxiety | 2 | 1 | 0.0317460 |
| Anxiety | 2 | 3 | 0.8571429 |
| Anxiety | 4 | 1 | 0.5555556 |
| Anxiety | 4 | 3 | 0.5333333 |
| Anxiety | 1 | 3 | 0.3809524 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.9624584 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.6317932 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.5552805 |

## Tạo bảng và Forest plot với biến Anadn\_mean

|  | Subgroup\_Category | Subgroup | n\_Anadn\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.7790195 | 0.6275641 | 0.9304748 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 1.5417381 | 0.5205539 | 2.5629223 | NA |
| 4 | Age\_stage | Age <30 | 26 | 1.0597436 | 0.6177187 | 1.5017685 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.7679167 | 0.5896037 | 0.9462296 | NA |
| 30 | Anxiety | 0 | 63 | 0.9801614 | 0.7326360 | 1.2276868 | NA |
| 33 | Anxiety | 1 | 5 | 0.5850000 | 0.2688020 | 0.9011980 | NA |
| 31 | Anxiety | 2 | 5 | 0.7995000 | 0.3690480 | 1.2299520 | NA |
| 34 | Anxiety | 3 | 2 | 0.5125000 | -1.1075411 | 2.1325411 | NA |
| 32 | Anxiety | 4 | 4 | 2.4387857 | -0.7725927 | 5.6501641 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.9588146 | 0.5754893 | 1.3421399 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 1.0973101 | 0.7457093 | 1.4489109 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.6777083 | 0.5250894 | 0.8303272 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.8483333 | 0.4126639 | 1.2840027 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.8679167 | 0.5132018 | 1.2226315 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 1.0091111 | 0.7361999 | 1.2820223 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.6237500 | 0.3902162 | 0.8572838 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.6625000 | -0.0969236 | 1.4219236 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.3897381 | 0.1691178 | 2.6103584 | NA |
| 1 | Gender | female | 34 | 1.0693669 | 0.6623175 | 1.4764164 | 0.2158163 |
| 2 | Gender | male | 45 | 0.9576519 | 0.6800430 | 1.2352607 | 0.2158163 |
| 35 | Hypertension | No | 58 | 0.9225053 | 0.6872354 | 1.1577753 | 0.0584671 |
| 36 | Hypertension | Yes | 21 | 1.2355952 | 0.6285004 | 1.8426901 | 0.0584671 |
| 40 | Obesity | No | 71 | 1.0426922 | 0.7872429 | 1.2981414 | 0.4026261 |
| 41 | Obesity | Yes | 8 | 0.6777083 | 0.5250894 | 0.8303272 | 0.4026261 |
| 7 | Race | Asian or Asian British | 61 | 1.0563029 | 0.7771207 | 1.3354850 | NA |
| 9 | Race | Black | 3 | 1.9366667 | -2.2033062 | 6.0766395 | NA |
| 8 | Race | White | 15 | 0.6138889 | 0.4805006 | 0.7472772 | NA |
| 18 | Smoking | Non smoker | 65 | 0.9155150 | 0.7010017 | 1.1300284 | 0.0743164 |
| 19 | Smoking | Smoker | 14 | 1.4245952 | 0.5219594 | 2.3272310 | 0.0743164 |
| 26 | Stress | 0 | 62 | 0.9967769 | 0.7461467 | 1.2474070 | NA |
| 27 | Stress | 1 | 10 | 0.9692500 | 0.2148150 | 1.7236850 | NA |
| 28 | Stress | 2 | 3 | 1.9200476 | -3.6022885 | 7.4423837 | NA |
| 29 | Stress | 3 | 4 | 0.5500000 | 0.3303766 | 0.7696234 | NA |
| 16 | Stress index | No | 57 | 1.0091111 | 0.7361999 | 1.2820223 | 0.2645886 |
| 17 | Stress index | Yes | 22 | 0.9969762 | 0.5281831 | 1.4657693 | 0.2645886 |
| 12 | Typer of skins | 1 | 13 | 0.6382692 | 0.4881427 | 0.7883957 | NA |
| 14 | Typer of skins | 2 | 5 | 1.1490000 | 0.0564380 | 2.2415620 | NA |
| 10 | Typer of skins | 3 | 40 | 0.9509000 | 0.6525815 | 1.2492185 | NA |
| 11 | Typer of skins | 4 | 11 | 0.6649372 | 0.5428830 | 0.7869915 | NA |
| 15 | Typer of skins | 5 | 6 | 1.6275000 | -0.4066713 | 3.6616713 | NA |
| 13 | Typer of skins | 6 | 4 | 2.5737500 | -0.3925575 | 5.5400575 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.6359821 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0212780 |
| Age\_stage | Age [30-40) | Age >=50 | 0.5302550 |
| Age\_stage | Age <30 | Age [40-50) | 0.0593252 |
| Age\_stage | Age <30 | Age >=50 | 0.6121610 |
| Age\_stage | Age [40-50) | Age >=50 | 0.2834393 |
| Race | Asian or Asian British | White | 0.0030502 |
| Race | Asian or Asian British | Black | 0.0420663 |
| Race | White | Black | 0.0098039 |
| Typer of skins | 3 | 4 | 0.1878549 |
| Typer of skins | 3 | 1 | 0.0332219 |
| Typer of skins | 3 | 6 | 0.0095265 |
| Typer of skins | 3 | 2 | 0.7588402 |
| Typer of skins | 3 | 5 | 0.1559279 |
| Typer of skins | 4 | 1 | 0.4340304 |
| Typer of skins | 4 | 6 | 0.0029304 |
| Typer of skins | 4 | 2 | 0.5096154 |
| Typer of skins | 4 | 5 | 0.0365223 |
| Typer of skins | 1 | 6 | 0.0033613 |
| Typer of skins | 1 | 2 | 0.2887488 |
| Typer of skins | 1 | 5 | 0.0066342 |
| Typer of skins | 6 | 2 | 0.1904762 |
| Typer of skins | 6 | 5 | 0.1714286 |
| Typer of skins | 2 | 5 | 0.6623377 |
| DASS\_21 | NORMAL | ANXIETY | 0.5192739 |
| DASS\_21 | NORMAL | STRESS | 0.1849166 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.4548065 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.1225204 |
| DASS\_21 | NORMAL | DEPRESSION | 0.4635423 |
| DASS\_21 | ANXIETY | STRESS | 0.2285714 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.3727273 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.4000000 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.9398601 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.4857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.1333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.1986014 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.3272727 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.5333333 |
| Stress | 0 | 1 | 0.1383880 |
| Stress | 0 | 2 | 0.9128598 |
| Stress | 0 | 3 | 0.0424555 |
| Stress | 1 | 2 | 0.4685315 |
| Stress | 1 | 3 | 0.6353646 |
| Stress | 2 | 3 | 0.2285714 |
| Anxiety | 0 | 2 | 0.8325109 |
| Anxiety | 0 | 4 | 0.2285441 |
| Anxiety | 0 | 1 | 0.0884514 |
| Anxiety | 0 | 3 | 0.0984289 |
| Anxiety | 2 | 4 | 0.1904762 |
| Anxiety | 2 | 1 | 0.2222222 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.0634921 |
| Anxiety | 4 | 3 | 0.1333333 |
| Anxiety | 1 | 3 | 0.8571429 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.9718423 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.4295151 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.4429047 |

## Tạo bảng và Forest plot với biến POM\_mean

|  | Subgroup\_Category | Subgroup | n\_POM\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 10.855431 | 8.7368205 | 12.974042 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 6.256202 | 3.8375625 | 8.674842 | NA |
| 4 | Age\_stage | Age <30 | 26 | 7.607596 | 5.3435948 | 9.871598 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 7.775833 | 2.3574457 | 13.194221 | NA |
| 30 | Anxiety | 0 | 63 | 8.080082 | 6.7738681 | 9.386296 | NA |
| 33 | Anxiety | 1 | 5 | 14.081000 | 6.5291492 | 21.632851 | NA |
| 31 | Anxiety | 2 | 5 | 8.431750 | 5.2559964 | 11.607504 | NA |
| 34 | Anxiety | 3 | 2 | 19.820000 | -101.3971932 | 141.037193 | NA |
| 32 | Anxiety | 4 | 4 | 7.254911 | -2.5263293 | 17.036151 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 10.129571 | 7.6708049 | 12.588336 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 7.445760 | 5.7829588 | 9.108561 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 10.809115 | 7.8083117 | 13.809917 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 11.660000 | 1.5197343 | 21.800266 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 10.120000 | -77.1716265 | 97.411626 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 7.703863 | 6.3744005 | 9.033325 | NA |
| 22 | DASS\_21 | STRESS | 4 | 12.421250 | 4.4246020 | 20.417898 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 16.432500 | -0.1626486 | 33.027649 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 8.945932 | 4.6948737 | 13.196991 | NA |
| 1 | Gender | female | 34 | 8.332820 | 6.3195473 | 10.346094 | 0.5187614 |
| 2 | Gender | male | 45 | 9.043393 | 7.3164950 | 10.770290 | 0.5187614 |
| 35 | Hypertension | No | 58 | 9.833862 | 8.2670420 | 11.400681 | 0.0035789 |
| 36 | Hypertension | Yes | 21 | 5.709742 | 4.0187991 | 7.400685 | 0.0035789 |
| 40 | Obesity | No | 71 | 8.504164 | 7.1084772 | 9.899851 | 0.1206767 |
| 41 | Obesity | Yes | 8 | 10.809115 | 7.8083117 | 13.809917 | 0.1206767 |
| 7 | Race | Asian or Asian British | 61 | 7.599321 | 6.3288575 | 8.869784 | NA |
| 9 | Race | Black | 3 | 8.375000 | -9.3892944 | 26.139294 | NA |
| 8 | Race | White | 15 | 13.439000 | 9.8976206 | 16.980379 | NA |
| 18 | Smoking | Non smoker | 65 | 8.930411 | 7.6495999 | 10.211222 | 0.1522790 |
| 19 | Smoking | Smoker | 14 | 7.842274 | 3.2049095 | 12.479638 | 0.1522790 |
| 26 | Stress | 0 | 62 | 7.973229 | 6.6776140 | 9.268843 | NA |
| 27 | Stress | 1 | 10 | 9.694875 | 5.5256978 | 13.864052 | NA |
| 28 | Stress | 2 | 3 | 11.207381 | -9.7064030 | 32.121165 | NA |
| 29 | Stress | 3 | 4 | 16.339375 | 2.3402860 | 30.338464 | NA |
| 16 | Stress index | No | 57 | 7.703863 | 6.3744005 | 9.033325 | 0.0106560 |
| 17 | Stress index | Yes | 22 | 11.415836 | 8.4532130 | 14.378459 | 0.0106560 |
| 12 | Typer of skins | 1 | 13 | 11.498237 | 8.6778789 | 14.318595 | NA |
| 14 | Typer of skins | 2 | 5 | 15.332000 | 2.9536743 | 27.710326 | NA |
| 10 | Typer of skins | 3 | 40 | 6.905462 | 5.4848898 | 8.326035 | NA |
| 11 | Typer of skins | 4 | 11 | 12.142771 | 8.8245205 | 15.461021 | NA |
| 15 | Typer of skins | 5 | 6 | 4.540417 | 0.9836002 | 8.097233 | NA |
| 13 | Typer of skins | 6 | 4 | 6.775000 | -3.8197345 | 17.369734 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0245119 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0052795 |
| Age\_stage | Age [30-40) | Age >=50 | 0.1841702 |
| Age\_stage | Age <30 | Age [40-50) | 0.5847069 |
| Age\_stage | Age <30 | Age >=50 | 0.8692882 |
| Age\_stage | Age [40-50) | Age >=50 | 0.4441692 |
| Race | Asian or Asian British | White | 0.0005702 |
| Race | Asian or Asian British | Black | 0.9240876 |
| Race | White | Black | 0.2500000 |
| Typer of skins | 3 | 4 | 0.0023686 |
| Typer of skins | 3 | 1 | 0.0019539 |
| Typer of skins | 3 | 6 | 0.5947949 |
| Typer of skins | 3 | 2 | 0.0314874 |
| Typer of skins | 3 | 5 | 0.2276480 |
| Typer of skins | 4 | 1 | 0.7762108 |
| Typer of skins | 4 | 6 | 0.1377289 |
| Typer of skins | 4 | 2 | 0.7426740 |
| Typer of skins | 4 | 5 | 0.0030705 |
| Typer of skins | 1 | 6 | 0.1302521 |
| Typer of skins | 1 | 2 | 0.6330532 |
| Typer of skins | 1 | 5 | 0.0032434 |
| Typer of skins | 6 | 2 | 0.1111111 |
| Typer of skins | 6 | 5 | 1.0000000 |
| Typer of skins | 2 | 5 | 0.0519481 |
| DASS\_21 | NORMAL | ANXIETY | 0.1187082 |
| DASS\_21 | NORMAL | STRESS | 0.0602089 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.4217103 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0492215 |
| DASS\_21 | NORMAL | DEPRESSION | 0.6600844 |
| DASS\_21 | ANXIETY | STRESS | 1.0000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.6000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.6285714 |
| DASS\_21 | ANXIETY | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.4139860 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.6857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.1482517 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9090909 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.5333333 |
| Stress | 0 | 1 | 0.2861824 |
| Stress | 0 | 2 | 0.4436768 |
| Stress | 0 | 3 | 0.0215788 |
| Stress | 1 | 2 | 0.6923077 |
| Stress | 1 | 3 | 0.0539461 |
| Stress | 2 | 3 | 0.8571429 |
| Anxiety | 0 | 2 | 0.5258090 |
| Anxiety | 0 | 4 | 0.7608824 |
| Anxiety | 0 | 1 | 0.0288732 |
| Anxiety | 0 | 3 | 0.0839162 |
| Anxiety | 2 | 4 | 1.0000000 |
| Anxiety | 2 | 1 | 0.1507937 |
| Anxiety | 2 | 3 | 0.1904762 |
| Anxiety | 4 | 1 | 0.0634921 |
| Anxiety | 4 | 3 | 0.5333333 |
| Anxiety | 1 | 3 | 0.8571429 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.0540043 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.0403912 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.5374172 |

## Tạo bảng và Forest plot với biến A-E\_mean

|  | Subgroup\_Category | Subgroup | n\_A-E\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 1.687170 | 1.4225196 | 1.951820 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 1.060762 | 0.6679014 | 1.453622 | NA |
| 4 | Age\_stage | Age <30 | 26 | 1.398237 | 1.1228389 | 1.673636 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 1.826944 | 0.3438377 | 3.310051 | NA |
| 30 | Anxiety | 0 | 63 | 1.477246 | 1.2699050 | 1.684587 | NA |
| 33 | Anxiety | 1 | 5 | 1.137000 | 0.5753169 | 1.698683 | NA |
| 31 | Anxiety | 2 | 5 | 1.391250 | 0.6030638 | 2.179436 | NA |
| 34 | Anxiety | 3 | 2 | 2.361250 | -5.1830591 | 9.905559 | NA |
| 32 | Anxiety | 4 | 4 | 1.853214 | 0.4511301 | 3.255298 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 1.429537 | 1.1306870 | 1.728386 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 1.458000 | 1.2056854 | 1.710315 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 1.890260 | 1.2185406 | 2.561980 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 1.010000 | -0.3025442 | 2.322544 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 2.175833 | 1.4875806 | 2.864086 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 1.442015 | 1.2170064 | 1.667023 | NA |
| 22 | DASS\_21 | STRESS | 4 | 1.630000 | 0.9147456 | 2.345254 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 1.706250 | 0.1994760 | 3.213024 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.657956 | 1.1280665 | 2.187846 | NA |
| 1 | Gender | female | 34 | 1.466224 | 1.2802464 | 1.652201 | 0.5724904 |
| 2 | Gender | male | 45 | 1.510922 | 1.2216150 | 1.800229 | 0.5724904 |
| 35 | Hypertension | No | 58 | 1.635793 | 1.4276423 | 1.843945 | 0.0056259 |
| 36 | Hypertension | Yes | 21 | 1.093671 | 0.7723999 | 1.414941 | 0.0056259 |
| 40 | Obesity | No | 71 | 1.446775 | 1.2585150 | 1.635035 | 0.1024263 |
| 41 | Obesity | Yes | 8 | 1.890260 | 1.2185406 | 2.561980 | 0.1024263 |
| 7 | Race | Asian or Asian British | 61 | 1.374313 | 1.1815818 | 1.567045 | NA |
| 9 | Race | Black | 3 | 1.458333 | -0.1865210 | 3.103188 | NA |
| 8 | Race | White | 15 | 1.975667 | 1.4847146 | 2.466619 | NA |
| 18 | Smoking | Non smoker | 65 | 1.591499 | 1.4015277 | 1.781470 | 0.0061233 |
| 19 | Smoking | Smoker | 14 | 1.028262 | 0.5493677 | 1.507156 | 0.0061233 |
| 26 | Stress | 0 | 62 | 1.444782 | 1.2328791 | 1.656685 | NA |
| 27 | Stress | 1 | 10 | 1.601125 | 1.2516204 | 1.950630 | NA |
| 28 | Stress | 2 | 3 | 1.277619 | -1.2881681 | 3.843406 | NA |
| 29 | Stress | 3 | 4 | 2.105625 | 0.9579921 | 3.253258 | NA |
| 16 | Stress index | No | 57 | 1.442015 | 1.2170064 | 1.667023 | 0.1715849 |
| 17 | Stress index | Yes | 22 | 1.620376 | 1.3231169 | 1.917635 | 0.1715849 |
| 12 | Typer of skins | 1 | 13 | 1.970481 | 1.4585989 | 2.482363 | NA |
| 14 | Typer of skins | 2 | 5 | 1.866000 | 0.7416306 | 2.990369 | NA |
| 10 | Typer of skins | 3 | 40 | 1.208621 | 0.9987070 | 1.418535 | NA |
| 11 | Typer of skins | 4 | 11 | 1.846320 | 1.4452738 | 2.247367 | NA |
| 15 | Typer of skins | 5 | 6 | 1.549583 | 0.2270473 | 2.872119 | NA |
| 13 | Typer of skins | 6 | 4 | 1.236250 | 0.1228793 | 2.349621 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.1106028 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0094922 |
| Age\_stage | Age [30-40) | Age >=50 | 0.9844714 |
| Age\_stage | Age <30 | Age [40-50) | 0.1538800 |
| Age\_stage | Age <30 | Age >=50 | 0.7597551 |
| Age\_stage | Age [40-50) | Age >=50 | 0.3118679 |
| Race | Asian or Asian British | White | 0.0109306 |
| Race | Asian or Asian British | Black | 0.6113142 |
| Race | White | Black | 0.3602941 |
| Typer of skins | 3 | 4 | 0.0023686 |
| Typer of skins | 3 | 1 | 0.0018052 |
| Typer of skins | 3 | 6 | 0.7980346 |
| Typer of skins | 3 | 2 | 0.1041066 |
| Typer of skins | 3 | 5 | 0.5992374 |
| Typer of skins | 4 | 1 | 0.7762108 |
| Typer of skins | 4 | 6 | 0.1772894 |
| Typer of skins | 4 | 2 | 0.9130037 |
| Typer of skins | 4 | 5 | 0.1489981 |
| Typer of skins | 1 | 6 | 0.1630252 |
| Typer of skins | 1 | 2 | 1.0000000 |
| Typer of skins | 1 | 5 | 0.1791243 |
| Typer of skins | 6 | 2 | 0.1904762 |
| Typer of skins | 6 | 5 | 0.7619048 |
| Typer of skins | 2 | 5 | 0.5367965 |
| DASS\_21 | NORMAL | ANXIETY | 0.4555517 |
| DASS\_21 | NORMAL | STRESS | 0.3820712 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.2784829 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.4935383 |
| DASS\_21 | NORMAL | DEPRESSION | 0.1484450 |
| DASS\_21 | ANXIETY | STRESS | 0.2285714 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.1454545 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.2285714 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.9398601 |
| DASS\_21 | STRESS | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS | DEPRESSION | 0.2666667 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.9398601 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.3272727 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.5333333 |
| Stress | 0 | 1 | 0.2543628 |
| Stress | 0 | 2 | 0.6502993 |
| Stress | 0 | 3 | 0.0879188 |
| Stress | 1 | 2 | 0.5734266 |
| Stress | 1 | 3 | 0.3736264 |
| Stress | 2 | 3 | 0.4000000 |
| Anxiety | 0 | 2 | 0.9625178 |
| Anxiety | 0 | 4 | 0.3210194 |
| Anxiety | 0 | 1 | 0.4243469 |
| Anxiety | 0 | 3 | 0.1239302 |
| Anxiety | 2 | 4 | 0.2857143 |
| Anxiety | 2 | 1 | 0.6904762 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.2857143 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.1904762 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.9250099 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.1123554 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.1453846 |

## Tạo bảng và Forest plot với biến A-N\_mean

|  | Subgroup\_Category | Subgroup | n\_A-N\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 1.593297 | 1.3343856 | 1.852209 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 1.189452 | 0.7215728 | 1.657332 | NA |
| 4 | Age\_stage | Age <30 | 26 | 1.386506 | 1.1087227 | 1.664290 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 1.678472 | 0.4469334 | 2.910011 | NA |
| 30 | Anxiety | 0 | 63 | 1.419468 | 1.2305287 | 1.608408 | NA |
| 33 | Anxiety | 1 | 5 | 1.223000 | 0.4837457 | 1.962254 | NA |
| 31 | Anxiety | 2 | 5 | 1.337500 | 0.5025733 | 2.172427 | NA |
| 34 | Anxiety | 3 | 2 | 2.455000 | -3.2627921 | 8.172792 | NA |
| 32 | Anxiety | 4 | 4 | 2.053036 | 0.2217600 | 3.884311 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 1.459571 | 1.1603465 | 1.758795 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 1.395306 | 1.1573773 | 1.633235 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 1.810625 | 1.1785520 | 2.442698 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.885000 | -0.1803592 | 1.950359 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 2.127083 | 1.0735272 | 3.180639 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 1.403067 | 1.1977798 | 1.608355 | NA |
| 22 | DASS\_21 | STRESS | 4 | 1.299375 | 0.8084286 | 1.790321 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 1.710000 | 0.0884221 | 3.331578 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.825516 | 1.1928255 | 2.458206 | NA |
| 1 | Gender | female | 34 | 1.440602 | 1.2317389 | 1.649466 | 0.7104068 |
| 2 | Gender | male | 45 | 1.474904 | 1.2088786 | 1.740929 | 0.7104068 |
| 35 | Hypertension | No | 58 | 1.592620 | 1.3967444 | 1.788496 | 0.0052540 |
| 36 | Hypertension | Yes | 21 | 1.094246 | 0.7584454 | 1.430047 | 0.0052540 |
| 40 | Obesity | No | 71 | 1.420650 | 1.2389468 | 1.602353 | 0.1880664 |
| 41 | Obesity | Yes | 8 | 1.810625 | 1.1785520 | 2.442698 | 0.1880664 |
| 7 | Race | Asian or Asian British | 61 | 1.307833 | 1.1269228 | 1.488743 | NA |
| 9 | Race | Black | 3 | 1.970000 | -0.7994515 | 4.739452 | NA |
| 8 | Race | White | 15 | 1.977556 | 1.5665373 | 2.388574 | NA |
| 18 | Smoking | Non smoker | 65 | 1.534366 | 1.3545240 | 1.714209 | 0.0226720 |
| 19 | Smoking | Smoker | 14 | 1.115524 | 0.5938598 | 1.637188 | 0.0226720 |
| 26 | Stress | 0 | 62 | 1.401355 | 1.2069245 | 1.595785 | NA |
| 27 | Stress | 1 | 10 | 1.662000 | 1.1883031 | 2.135697 | NA |
| 28 | Stress | 2 | 3 | 1.377381 | -1.7026127 | 4.457375 | NA |
| 29 | Stress | 3 | 4 | 1.928750 | 0.6139051 | 3.243595 | NA |
| 16 | Stress index | No | 57 | 1.403067 | 1.1977798 | 1.608355 | 0.2716902 |
| 17 | Stress index | Yes | 22 | 1.608014 | 1.2706521 | 1.945376 | 0.2716902 |
| 12 | Typer of skins | 1 | 13 | 1.963269 | 1.5562435 | 2.370295 | NA |
| 14 | Typer of skins | 2 | 5 | 1.956000 | 0.8811051 | 3.030895 | NA |
| 10 | Typer of skins | 3 | 40 | 1.167683 | 0.9671601 | 1.368207 | NA |
| 11 | Typer of skins | 4 | 11 | 1.684665 | 1.2307360 | 2.138593 | NA |
| 15 | Typer of skins | 5 | 6 | 1.403333 | 0.3263973 | 2.480269 | NA |
| 13 | Typer of skins | 6 | 4 | 1.597500 | -0.2742175 | 3.469218 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.4053471 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0579639 |
| Age\_stage | Age [30-40) | Age >=50 | 0.9534353 |
| Age\_stage | Age <30 | Age [40-50) | 0.3917727 |
| Age\_stage | Age <30 | Age >=50 | 0.6890791 |
| Age\_stage | Age [40-50) | Age >=50 | 0.3530444 |
| Race | Asian or Asian British | White | 0.0042612 |
| Race | Asian or Asian British | Black | 0.2662794 |
| Race | White | Black | 1.0000000 |
| Typer of skins | 3 | 4 | 0.0185432 |
| Typer of skins | 3 | 1 | 0.0009343 |
| Typer of skins | 3 | 6 | 0.7084147 |
| Typer of skins | 3 | 2 | 0.0467097 |
| Typer of skins | 3 | 5 | 0.7869508 |
| Typer of skins | 4 | 1 | 0.2766683 |
| Typer of skins | 4 | 6 | 0.8512821 |
| Typer of skins | 4 | 2 | 0.5833333 |
| Typer of skins | 4 | 5 | 0.3010666 |
| Typer of skins | 1 | 6 | 0.6235294 |
| Typer of skins | 1 | 2 | 0.8435541 |
| Typer of skins | 1 | 5 | 0.1273773 |
| Typer of skins | 6 | 2 | 0.5555556 |
| Typer of skins | 6 | 5 | 1.0000000 |
| Typer of skins | 2 | 5 | 0.4285714 |
| DASS\_21 | NORMAL | ANXIETY | 0.2488196 |
| DASS\_21 | NORMAL | STRESS | 0.8497908 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.1449922 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.6101329 |
| DASS\_21 | NORMAL | DEPRESSION | 0.1870324 |
| DASS\_21 | ANXIETY | STRESS | 0.2285714 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.1000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.2285714 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.2601399 |
| DASS\_21 | STRESS | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS | DEPRESSION | 0.1333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.3272727 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 1.0000000 |
| Stress | 0 | 1 | 0.1983124 |
| Stress | 0 | 2 | 0.6959302 |
| Stress | 0 | 3 | 0.2317387 |
| Stress | 1 | 2 | 0.4685315 |
| Stress | 1 | 3 | 0.6353646 |
| Stress | 2 | 3 | 0.4000000 |
| Anxiety | 0 | 2 | 0.8508946 |
| Anxiety | 0 | 4 | 0.2389535 |
| Anxiety | 0 | 1 | 0.5970201 |
| Anxiety | 0 | 3 | 0.0984436 |
| Anxiety | 2 | 4 | 0.5555556 |
| Anxiety | 2 | 1 | 1.0000000 |
| Anxiety | 2 | 3 | 0.0952381 |
| Anxiety | 4 | 1 | 0.4126984 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.1904762 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.8784353 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.1532241 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.3414341 |

## Tạo bảng và Forest plot với biến A-M\_mean

|  | Subgroup\_Category | Subgroup | n\_A-M\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 1.2711530 | 1.0596429 | 1.482663 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.9285714 | 0.5785816 | 1.278561 | NA |
| 4 | Age\_stage | Age <30 | 26 | 1.1463462 | 0.9204643 | 1.372228 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 1.2611111 | 0.4676743 | 2.054548 | NA |
| 30 | Anxiety | 0 | 63 | 1.1326984 | 0.9848573 | 1.280539 | NA |
| 33 | Anxiety | 1 | 5 | 1.0540000 | 0.4288311 | 1.679169 | NA |
| 31 | Anxiety | 2 | 5 | 1.0150000 | 0.4896352 | 1.540365 | NA |
| 34 | Anxiety | 3 | 2 | 1.8512500 | -2.1988528 | 5.901353 | NA |
| 32 | Anxiety | 4 | 4 | 1.7280536 | 0.3317575 | 3.124350 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 1.1954065 | 0.9515220 | 1.439291 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 1.1317054 | 0.9440730 | 1.319338 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 1.2731250 | 0.8736046 | 1.672645 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.7516667 | 0.1021783 | 1.401155 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 1.6187500 | 0.2687157 | 2.968784 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 1.1073246 | 0.9475050 | 1.267144 | NA |
| 22 | DASS\_21 | STRESS | 4 | 1.2512500 | 0.6278446 | 1.874655 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 1.4112500 | 0.2271979 | 2.595302 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.4510794 | 0.9545638 | 1.947595 | NA |
| 1 | Gender | female | 34 | 1.1708249 | 0.9909812 | 1.350669 | 0.8006618 |
| 2 | Gender | male | 45 | 1.1669259 | 0.9680019 | 1.365850 | 0.8006618 |
| 35 | Hypertension | No | 58 | 1.2917911 | 1.1371486 | 1.446433 | 0.0020347 |
| 36 | Hypertension | Yes | 21 | 0.8283730 | 0.6000964 | 1.056650 | 0.0020347 |
| 40 | Obesity | No | 71 | 1.1568270 | 1.0115730 | 1.302081 | 0.5262217 |
| 41 | Obesity | Yes | 8 | 1.2731250 | 0.8736046 | 1.672645 | 0.5262217 |
| 7 | Race | Asian or Asian British | 61 | 1.0695172 | 0.9179422 | 1.221092 | NA |
| 9 | Race | Black | 3 | 1.4416667 | -0.2229064 | 3.106240 | NA |
| 8 | Race | White | 15 | 1.5169444 | 1.2400191 | 1.793870 | NA |
| 18 | Smoking | Non smoker | 65 | 1.2305341 | 1.0901183 | 1.370950 | 0.0204801 |
| 19 | Smoking | Smoker | 14 | 0.8810714 | 0.4856000 | 1.276543 | 0.0204801 |
| 26 | Stress | 0 | 62 | 1.1066129 | 0.9562716 | 1.256954 | NA |
| 27 | Stress | 1 | 10 | 1.3405000 | 1.0175030 | 1.663497 | NA |
| 28 | Stress | 2 | 3 | 1.2690714 | -1.3888316 | 3.926975 | NA |
| 29 | Stress | 3 | 4 | 1.6243750 | 0.6351662 | 2.613584 | NA |
| 16 | Stress index | No | 57 | 1.1073246 | 0.9475050 | 1.267144 | 0.1230418 |
| 17 | Stress index | Yes | 22 | 1.3273734 | 1.0719034 | 1.582843 | 0.1230418 |
| 12 | Typer of skins | 1 | 13 | 1.4678846 | 1.1782660 | 1.757503 | NA |
| 14 | Typer of skins | 2 | 5 | 1.5710000 | 0.8799300 | 2.262070 | NA |
| 10 | Typer of skins | 3 | 40 | 0.9471667 | 0.7720734 | 1.122260 | NA |
| 11 | Typer of skins | 4 | 11 | 1.4355043 | 1.0827910 | 1.788218 | NA |
| 15 | Typer of skins | 5 | 6 | 1.1533333 | 0.3044416 | 2.002225 | NA |
| 13 | Typer of skins | 6 | 4 | 1.1962500 | 0.0266672 | 2.365833 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.4361800 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.0595264 |
| Age\_stage | Age [30-40) | Age >=50 | 0.9848769 |
| Age\_stage | Age <30 | Age [40-50) | 0.2543006 |
| Age\_stage | Age <30 | Age >=50 | 0.8692882 |
| Age\_stage | Age [40-50) | Age >=50 | 0.3118679 |
| Race | Asian or Asian British | White | 0.0048174 |
| Race | Asian or Asian British | Black | 0.3406493 |
| Race | White | Black | 1.0000000 |
| Typer of skins | 3 | 4 | 0.0117598 |
| Typer of skins | 3 | 1 | 0.0024571 |
| Typer of skins | 3 | 6 | 0.6981274 |
| Typer of skins | 3 | 2 | 0.0263379 |
| Typer of skins | 3 | 5 | 0.5681321 |
| Typer of skins | 4 | 1 | 0.7329601 |
| Typer of skins | 4 | 6 | 0.7531136 |
| Typer of skins | 4 | 2 | 0.6611722 |
| Typer of skins | 4 | 5 | 0.1489981 |
| Typer of skins | 1 | 6 | 0.6235294 |
| Typer of skins | 1 | 2 | 0.5662932 |
| Typer of skins | 1 | 5 | 0.1517765 |
| Typer of skins | 6 | 2 | 0.2857143 |
| Typer of skins | 6 | 5 | 1.0000000 |
| Typer of skins | 2 | 5 | 0.2467532 |
| DASS\_21 | NORMAL | ANXIETY | 0.2777513 |
| DASS\_21 | NORMAL | STRESS | 0.4843781 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.1209313 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.3148009 |
| DASS\_21 | NORMAL | DEPRESSION | 0.2014176 |
| DASS\_21 | ANXIETY | STRESS | 0.1142857 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.1454545 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.2285714 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.6041958 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.6857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.2666667 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.8251748 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9090909 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 1.0000000 |
| Stress | 0 | 1 | 0.1384007 |
| Stress | 0 | 2 | 0.9376976 |
| Stress | 0 | 3 | 0.0983819 |
| Stress | 1 | 2 | 0.6923077 |
| Stress | 1 | 3 | 0.3036963 |
| Stress | 2 | 3 | 0.8571429 |
| Anxiety | 0 | 2 | 0.7779678 |
| Anxiety | 0 | 4 | 0.1348679 |
| Anxiety | 0 | 1 | 0.9625174 |
| Anxiety | 0 | 3 | 0.1239261 |
| Anxiety | 2 | 4 | 0.2857143 |
| Anxiety | 2 | 1 | 1.0000000 |
| Anxiety | 2 | 3 | 0.1904762 |
| Anxiety | 4 | 1 | 0.2857143 |
| Anxiety | 4 | 3 | 1.0000000 |
| Anxiety | 1 | 3 | 0.1904762 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.7821702 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.4448167 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.7319891 |

## Tạo bảng và Forest plot với biến A-R\_mean

|  | Subgroup\_Category | Subgroup | n\_A-R\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.7331418 | 0.6259639 | 0.8403197 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.6227381 | 0.4384387 | 0.8070375 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.6820192 | 0.5818995 | 0.7821389 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.8145833 | 0.4497840 | 1.1793827 | NA |
| 30 | Anxiety | 0 | 63 | 0.6844180 | 0.6122603 | 0.7565757 | NA |
| 33 | Anxiety | 1 | 5 | 0.8690000 | 0.3807402 | 1.3572598 | NA |
| 31 | Anxiety | 2 | 5 | 0.5572500 | 0.4323466 | 0.6821534 | NA |
| 34 | Anxiety | 3 | 2 | 1.1012500 | -1.8052943 | 4.0077943 | NA |
| 32 | Anxiety | 4 | 4 | 0.7699821 | 0.4255343 | 1.1144299 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.7634201 | 0.6507693 | 0.8760708 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.6471512 | 0.5622957 | 0.7320066 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.7910938 | 0.5041723 | 1.0780152 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.5300000 | 0.2575930 | 0.8024070 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 1.0112500 | 0.0741674 | 1.9483326 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.6613743 | 0.5853139 | 0.7374346 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.8493750 | 0.5254400 | 1.1733100 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 1.0575000 | 0.3281508 | 1.7868492 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 0.7326310 | 0.6026725 | 0.8625895 | NA |
| 1 | Gender | female | 34 | 0.7251572 | 0.6269389 | 0.8233756 | 0.8275483 |
| 2 | Gender | male | 45 | 0.6861481 | 0.5961281 | 0.7761682 | 0.8275483 |
| 35 | Hypertension | No | 58 | 0.7573838 | 0.6837370 | 0.8310307 | 0.0037059 |
| 36 | Hypertension | Yes | 21 | 0.5525595 | 0.4288956 | 0.6762234 | 0.0037059 |
| 40 | Obesity | No | 71 | 0.6930037 | 0.6254546 | 0.7605528 | 0.6143986 |
| 41 | Obesity | Yes | 8 | 0.7910938 | 0.5041723 | 1.0780152 | 0.6143986 |
| 7 | Race | Asian or Asian British | 61 | 0.6571505 | 0.5858760 | 0.7284249 | NA |
| 9 | Race | Black | 3 | 0.7883333 | 0.4919669 | 1.0846997 | NA |
| 8 | Race | White | 15 | 0.8720556 | 0.7006882 | 1.0434229 | NA |
| 18 | Smoking | Non smoker | 65 | 0.7296720 | 0.6621857 | 0.7971583 | 0.0807770 |
| 19 | Smoking | Smoker | 14 | 0.5788095 | 0.3771885 | 0.7804306 | 0.0807770 |
| 26 | Stress | 0 | 62 | 0.6663038 | 0.5940959 | 0.7385116 | NA |
| 27 | Stress | 1 | 10 | 0.8453750 | 0.6313640 | 1.0593860 | NA |
| 28 | Stress | 2 | 3 | 0.7474762 | 0.0946604 | 1.4002920 | NA |
| 29 | Stress | 3 | 4 | 0.8812500 | 0.3778881 | 1.3846119 | NA |
| 16 | Stress index | No | 57 | 0.6613743 | 0.5853139 | 0.7374346 | 0.0614357 |
| 17 | Stress index | Yes | 22 | 0.8106218 | 0.6867370 | 0.9345065 | 0.0614357 |
| 12 | Typer of skins | 1 | 13 | 0.8410577 | 0.6544881 | 1.0276273 | NA |
| 14 | Typer of skins | 2 | 5 | 0.9130000 | 0.5073491 | 1.3186509 | NA |
| 10 | Typer of skins | 3 | 40 | 0.5681667 | 0.4941772 | 0.6421561 | NA |
| 11 | Typer of skins | 4 | 11 | 0.8908268 | 0.7325203 | 1.0491334 | NA |
| 15 | Typer of skins | 5 | 6 | 0.7695833 | 0.3799776 | 1.1591891 | NA |
| 13 | Typer of skins | 6 | 4 | 0.7225000 | 0.4618841 | 0.9831159 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.7717352 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.3401702 |
| Age\_stage | Age [30-40) | Age >=50 | 0.4576410 |
| Age\_stage | Age <30 | Age [40-50) | 0.4695872 |
| Age\_stage | Age <30 | Age >=50 | 0.3813739 |
| Age\_stage | Age [40-50) | Age >=50 | 0.2740454 |
| Race | Asian or Asian British | White | 0.0157540 |
| Race | Asian or Asian British | Black | 0.3406106 |
| Race | White | Black | 1.0000000 |
| Typer of skins | 3 | 4 | 0.0008964 |
| Typer of skins | 3 | 1 | 0.0040576 |
| Typer of skins | 3 | 6 | 0.1913715 |
| Typer of skins | 3 | 2 | 0.0288675 |
| Typer of skins | 3 | 5 | 0.1758435 |
| Typer of skins | 4 | 1 | 0.4940332 |
| Typer of skins | 4 | 6 | 0.2256410 |
| Typer of skins | 4 | 2 | 1.0000000 |
| Typer of skins | 4 | 5 | 0.6874914 |
| Typer of skins | 1 | 6 | 0.7033613 |
| Typer of skins | 1 | 2 | 0.6330532 |
| Typer of skins | 1 | 5 | 0.9660917 |
| Typer of skins | 6 | 2 | 0.4126984 |
| Typer of skins | 6 | 5 | 0.6095238 |
| Typer of skins | 2 | 5 | 0.5367965 |
| DASS\_21 | NORMAL | ANXIETY | 0.3088457 |
| DASS\_21 | NORMAL | STRESS | 0.1754477 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.3549723 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0642779 |
| DASS\_21 | NORMAL | DEPRESSION | 0.0897946 |
| DASS\_21 | ANXIETY | STRESS | 0.1142857 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.0636364 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.1142857 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.3300699 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.6857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.5333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.2601399 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.0727273 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 1.0000000 |
| Stress | 0 | 1 | 0.0967170 |
| Stress | 0 | 2 | 0.6059010 |
| Stress | 0 | 3 | 0.1663245 |
| Stress | 1 | 2 | 0.5734266 |
| Stress | 1 | 3 | 0.8391608 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.2544121 |
| Anxiety | 0 | 4 | 0.5604208 |
| Anxiety | 0 | 1 | 0.2957123 |
| Anxiety | 0 | 3 | 0.0984289 |
| Anxiety | 2 | 4 | 0.1904762 |
| Anxiety | 2 | 1 | 0.0555556 |
| Anxiety | 2 | 3 | 0.0952381 |
| Anxiety | 4 | 1 | 0.9047619 |
| Anxiety | 4 | 3 | 0.2666667 |
| Anxiety | 1 | 3 | 0.3809524 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.1261139 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.3926743 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.9544726 |

## Tạo bảng và Forest plot với biến A-C\_mean

|  | Subgroup\_Category | Subgroup | n\_A-C\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.9474264 | 0.8518189 | 1.0430339 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.8450357 | 0.5883589 | 1.1017126 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.9086859 | 0.7323884 | 1.0849834 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 1.0769444 | 0.6675533 | 1.4863356 | NA |
| 30 | Anxiety | 0 | 63 | 0.9061190 | 0.8096778 | 1.0025603 | NA |
| 33 | Anxiety | 1 | 5 | 0.8990000 | 0.5619334 | 1.2360666 | NA |
| 31 | Anxiety | 2 | 5 | 0.9365000 | 0.6057095 | 1.2672905 | NA |
| 34 | Anxiety | 3 | 2 | 1.2375000 | 1.0151414 | 1.4598586 | NA |
| 32 | Anxiety | 4 | 4 | 1.1112679 | 0.3766830 | 1.8458527 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.9880383 | 0.8424838 | 1.1335927 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.8748760 | 0.7586193 | 0.9911326 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.9872917 | 0.7379414 | 1.2366419 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.7650000 | 0.3843915 | 1.1456085 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.8941667 | 0.3117989 | 1.4765344 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.8917047 | 0.7875230 | 0.9958864 | NA |
| 22 | DASS\_21 | STRESS | 4 | 1.1175000 | 0.6461155 | 1.5888845 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 1.1275000 | 0.8937743 | 1.3612257 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.0325079 | 0.7474459 | 1.3175699 | NA |
| 1 | Gender | female | 34 | 0.9387766 | 0.8117019 | 1.0658513 | 0.9565689 |
| 2 | Gender | male | 45 | 0.9169926 | 0.8034509 | 1.0305343 | 0.9565689 |
| 35 | Hypertension | No | 58 | 0.9933576 | 0.9028081 | 1.0839070 | 0.0011700 |
| 36 | Hypertension | Yes | 21 | 0.7413492 | 0.5670732 | 0.9156252 | 0.0011700 |
| 40 | Obesity | No | 71 | 0.9195034 | 0.8299735 | 1.0090333 | 0.4305904 |
| 41 | Obesity | Yes | 8 | 0.9872917 | 0.7379414 | 1.2366419 | 0.4305904 |
| 7 | Race | Asian or Asian British | 61 | 0.8604055 | 0.7682199 | 0.9525912 | NA |
| 9 | Race | Black | 3 | 1.2400000 | 0.2349982 | 2.2450018 | NA |
| 8 | Race | White | 15 | 1.1318889 | 0.9582887 | 1.3054891 | NA |
| 18 | Smoking | Non smoker | 65 | 0.9576549 | 0.8685247 | 1.0467852 | 0.1903315 |
| 19 | Smoking | Smoker | 14 | 0.7811071 | 0.5528922 | 1.0093220 | 0.1903315 |
| 26 | Stress | 0 | 62 | 0.8856532 | 0.7895795 | 0.9817270 | NA |
| 27 | Stress | 1 | 10 | 1.1252500 | 0.8869014 | 1.3635986 | NA |
| 28 | Stress | 2 | 3 | 0.9008571 | 0.0567356 | 1.7449787 | NA |
| 29 | Stress | 3 | 4 | 1.0793750 | 0.7659677 | 1.3927823 | NA |
| 16 | Stress index | No | 57 | 0.8917047 | 0.7875230 | 0.9958864 | 0.0606901 |
| 17 | Stress index | Yes | 22 | 1.0161775 | 0.8866781 | 1.1456769 | 0.0606901 |
| 12 | Typer of skins | 1 | 13 | 1.1328846 | 0.9531647 | 1.3126045 | NA |
| 14 | Typer of skins | 2 | 5 | 0.9160000 | 0.6906371 | 1.1413629 | NA |
| 10 | Typer of skins | 3 | 40 | 0.7970542 | 0.6808958 | 0.9132125 | NA |
| 11 | Typer of skins | 4 | 11 | 1.1298550 | 0.8861358 | 1.3735741 | NA |
| 15 | Typer of skins | 5 | 6 | 0.8658333 | 0.4973086 | 1.2343581 | NA |
| 13 | Typer of skins | 6 | 4 | 1.0925000 | 0.3877809 | 1.7972191 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.2490106 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.3268910 |
| Age\_stage | Age [30-40) | Age >=50 | 0.6128216 |
| Age\_stage | Age <30 | Age [40-50) | 0.9096853 |
| Age\_stage | Age <30 | Age >=50 | 0.2565033 |
| Age\_stage | Age [40-50) | Age >=50 | 0.3118679 |
| Race | Asian or Asian British | White | 0.0074624 |
| Race | Asian or Asian British | Black | 0.1018773 |
| Race | White | Black | 0.5534122 |
| Typer of skins | 3 | 4 | 0.0050221 |
| Typer of skins | 3 | 1 | 0.0017354 |
| Typer of skins | 3 | 6 | 0.1589518 |
| Typer of skins | 3 | 2 | 0.2866406 |
| Typer of skins | 3 | 5 | 0.5904249 |
| Typer of skins | 4 | 1 | 0.8166960 |
| Typer of skins | 4 | 6 | 0.9494505 |
| Typer of skins | 4 | 2 | 0.2211538 |
| Typer of skins | 4 | 5 | 0.0982547 |
| Typer of skins | 1 | 6 | 0.8650528 |
| Typer of skins | 1 | 2 | 0.0758604 |
| Typer of skins | 1 | 5 | 0.1045318 |
| Typer of skins | 6 | 2 | 0.7301587 |
| Typer of skins | 6 | 5 | 0.3923303 |
| Typer of skins | 2 | 5 | 0.5367965 |
| DASS\_21 | NORMAL | ANXIETY | 0.6964801 |
| DASS\_21 | NORMAL | STRESS | 0.1372776 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.2622288 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0731451 |
| DASS\_21 | NORMAL | DEPRESSION | 0.6906828 |
| DASS\_21 | ANXIETY | STRESS | 0.0571429 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.3727273 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.0571429 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.4000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.6041958 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.8857143 |
| DASS\_21 | STRESS | DEPRESSION | 0.2666667 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.7104895 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9090909 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.1333333 |
| Stress | 0 | 1 | 0.0207626 |
| Stress | 0 | 2 | 0.9625930 |
| Stress | 0 | 3 | 0.1430089 |
| Stress | 1 | 2 | 0.3706294 |
| Stress | 1 | 3 | 0.8391608 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.6051898 |
| Anxiety | 0 | 4 | 0.3897474 |
| Anxiety | 0 | 1 | 0.8971684 |
| Anxiety | 0 | 3 | 0.1064164 |
| Anxiety | 2 | 4 | 0.7301587 |
| Anxiety | 2 | 1 | 0.8412698 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.5555556 |
| Anxiety | 4 | 3 | 1.0000000 |
| Anxiety | 1 | 3 | 0.3809524 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.2977400 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.2709728 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.8342189 |

## Tạo bảng và Forest plot với biến F-E\_mean

|  | Subgroup\_Category | Subgroup | n\_F-E\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.0148832 | 0.0140432 | 0.0157231 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.0151702 | 0.0135718 | 0.0167687 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.0148526 | 0.0137123 | 0.0159929 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.0157083 | 0.0131799 | 0.0182368 | NA |
| 30 | Anxiety | 0 | 63 | 0.0149228 | 0.0142797 | 0.0155658 | NA |
| 33 | Anxiety | 1 | 5 | 0.0168000 | 0.0126446 | 0.0209554 | NA |
| 31 | Anxiety | 2 | 5 | 0.0143750 | 0.0124427 | 0.0163073 | NA |
| 34 | Anxiety | 3 | 2 | 0.0158750 | 0.0047571 | 0.0269929 | NA |
| 32 | Anxiety | 4 | 4 | 0.0140464 | 0.0091842 | 0.0189087 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.0150721 | 0.0139292 | 0.0162150 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.0148849 | 0.0141374 | 0.0156324 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.0152344 | 0.0135510 | 0.0169178 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.0146667 | 0.0089298 | 0.0204035 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.0150833 | -0.0113879 | 0.0415546 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.0150257 | 0.0143391 | 0.0157124 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.0133750 | 0.0104427 | 0.0163073 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.0146250 | 0.0117656 | 0.0174844 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 0.0157012 | 0.0132451 | 0.0181573 | NA |
| 1 | Gender | female | 34 | 0.0148988 | 0.0140248 | 0.0157729 | 0.6990139 |
| 2 | Gender | male | 45 | 0.0150530 | 0.0142628 | 0.0158431 | 0.6990139 |
| 35 | Hypertension | No | 58 | 0.0150687 | 0.0143976 | 0.0157399 | 0.6973449 |
| 36 | Hypertension | Yes | 21 | 0.0147599 | 0.0135598 | 0.0159600 | 0.6973449 |
| 40 | Obesity | No | 71 | 0.0149587 | 0.0143370 | 0.0155804 | 0.7448559 |
| 41 | Obesity | Yes | 8 | 0.0152344 | 0.0135510 | 0.0169178 | 0.7448559 |
| 7 | Race | Asian or Asian British | 61 | 0.0147846 | 0.0140963 | 0.0154729 | NA |
| 9 | Race | Black | 3 | 0.0140000 | 0.0083081 | 0.0196919 | NA |
| 8 | Race | White | 15 | 0.0160056 | 0.0149907 | 0.0170204 | NA |
| 18 | Smoking | Non smoker | 65 | 0.0148394 | 0.0141855 | 0.0154933 | 0.2579447 |
| 19 | Smoking | Smoker | 14 | 0.0156702 | 0.0144480 | 0.0168924 | 0.2579447 |
| 26 | Stress | 0 | 62 | 0.0150102 | 0.0143642 | 0.0156563 | NA |
| 27 | Stress | 1 | 10 | 0.0144875 | 0.0126713 | 0.0163037 | NA |
| 28 | Stress | 2 | 3 | 0.0175619 | 0.0106000 | 0.0245239 | NA |
| 29 | Stress | 3 | 4 | 0.0139375 | 0.0102005 | 0.0176745 | NA |
| 16 | Stress index | No | 57 | 0.0150257 | 0.0143391 | 0.0157124 | 0.6693154 |
| 17 | Stress index | Yes | 22 | 0.0148853 | 0.0137549 | 0.0160158 | 0.6693154 |
| 12 | Typer of skins | 1 | 13 | 0.0155737 | 0.0146295 | 0.0165180 | NA |
| 14 | Typer of skins | 2 | 5 | 0.0168000 | 0.0132444 | 0.0203556 | NA |
| 10 | Typer of skins | 3 | 40 | 0.0147700 | 0.0138326 | 0.0157074 | NA |
| 11 | Typer of skins | 4 | 11 | 0.0145623 | 0.0129008 | 0.0162239 | NA |
| 15 | Typer of skins | 5 | 6 | 0.0150000 | 0.0131748 | 0.0168252 | NA |
| 13 | Typer of skins | 6 | 4 | 0.0141250 | 0.0111216 | 0.0171284 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.8784296 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.9072836 |
| Age\_stage | Age [30-40) | Age >=50 | 0.3102874 |
| Age\_stage | Age <30 | Age [40-50) | 0.7015149 |
| Age\_stage | Age <30 | Age >=50 | 0.3840353 |
| Age\_stage | Age [40-50) | Age >=50 | 0.6798239 |
| Race | Asian or Asian British | White | 0.0822015 |
| Race | Asian or Asian British | Black | 0.6676734 |
| Race | White | Black | 0.1717382 |
| Typer of skins | 3 | 4 | 0.7136218 |
| Typer of skins | 3 | 1 | 0.3409367 |
| Typer of skins | 3 | 6 | 0.7280117 |
| Typer of skins | 3 | 2 | 0.1686856 |
| Typer of skins | 3 | 5 | 0.8316975 |
| Typer of skins | 4 | 1 | 0.2107025 |
| Typer of skins | 4 | 6 | 0.8958470 |
| Typer of skins | 4 | 2 | 0.1558299 |
| Typer of skins | 4 | 5 | 0.6139967 |
| Typer of skins | 1 | 6 | 0.2115414 |
| Typer of skins | 1 | 2 | 0.4008865 |
| Typer of skins | 1 | 5 | 0.5374648 |
| Typer of skins | 6 | 2 | 0.1904762 |
| Typer of skins | 6 | 5 | 0.3923303 |
| Typer of skins | 2 | 5 | 0.2722293 |
| DASS\_21 | NORMAL | ANXIETY | 0.8251904 |
| DASS\_21 | NORMAL | STRESS | 0.1701376 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.6806136 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.7151948 |
| DASS\_21 | NORMAL | DEPRESSION | 0.8338348 |
| DASS\_21 | ANXIETY | STRESS | 0.3680655 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.7803858 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.7110254 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.7670969 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.1884438 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.3807457 |
| DASS\_21 | STRESS | DEPRESSION | 0.8143375 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.8770350 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9059727 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8000000 |
| Stress | 0 | 1 | 0.3829740 |
| Stress | 0 | 2 | 0.1411050 |
| Stress | 0 | 3 | 0.3530826 |
| Stress | 1 | 2 | 0.1266154 |
| Stress | 1 | 3 | 0.9434416 |
| Stress | 2 | 3 | 0.2117984 |
| Anxiety | 0 | 2 | 0.5883490 |
| Anxiety | 0 | 4 | 0.4581124 |
| Anxiety | 0 | 1 | 0.1915358 |
| Anxiety | 0 | 3 | 0.6343778 |
| Anxiety | 2 | 4 | 0.8057008 |
| Anxiety | 2 | 1 | 0.1666074 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 0.2148469 |
| Anxiety | 4 | 3 | 0.5333333 |
| Anxiety | 1 | 3 | 0.8436689 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.8366298 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.6780857 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.8939301 |

## Tạo bảng và Forest plot với biến F-N\_mean

|  | Subgroup\_Category | Subgroup | n\_F-N\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.0325071 | 0.0296913 | 0.0353229 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.0324595 | 0.0278273 | 0.0370917 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.0374455 | 0.0339923 | 0.0408987 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.0366250 | 0.0281256 | 0.0451244 | NA |
| 30 | Anxiety | 0 | 63 | 0.0335981 | 0.0315855 | 0.0356108 | NA |
| 33 | Anxiety | 1 | 5 | 0.0361000 | 0.0259612 | 0.0462388 | NA |
| 31 | Anxiety | 2 | 5 | 0.0364250 | 0.0211784 | 0.0516716 | NA |
| 34 | Anxiety | 3 | 2 | 0.0365000 | -0.0143248 | 0.0873248 | NA |
| 32 | Anxiety | 4 | 4 | 0.0420482 | 0.0268926 | 0.0572038 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.0357569 | 0.0324403 | 0.0390734 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.0338318 | 0.0312964 | 0.0363672 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.0330677 | 0.0256815 | 0.0404540 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.0391667 | 0.0000004 | 0.0783329 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.0252917 | -0.0101798 | 0.0607632 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.0335675 | 0.0314676 | 0.0356675 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.0381875 | 0.0247506 | 0.0516244 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.0402500 | 0.0349925 | 0.0455075 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 0.0361464 | 0.0290114 | 0.0432815 | NA |
| 1 | Gender | female | 34 | 0.0343647 | 0.0313047 | 0.0374248 | 0.6774221 |
| 2 | Gender | male | 45 | 0.0344911 | 0.0320465 | 0.0369357 | 0.6774221 |
| 35 | Hypertension | No | 58 | 0.0347364 | 0.0325900 | 0.0368828 | 0.6135026 |
| 36 | Hypertension | Yes | 21 | 0.0336091 | 0.0294951 | 0.0377232 | 0.6135026 |
| 40 | Obesity | No | 71 | 0.0345910 | 0.0326129 | 0.0365690 | 0.4595295 |
| 41 | Obesity | Yes | 8 | 0.0330677 | 0.0256815 | 0.0404540 | 0.4595295 |
| 7 | Race | Asian or Asian British | 61 | 0.0348989 | 0.0326259 | 0.0371720 | NA |
| 9 | Race | Black | 3 | 0.0378333 | 0.0245523 | 0.0511144 | NA |
| 8 | Race | White | 15 | 0.0318778 | 0.0284948 | 0.0352608 | NA |
| 18 | Smoking | Non smoker | 65 | 0.0342318 | 0.0321324 | 0.0363312 | 0.4602425 |
| 19 | Smoking | Smoker | 14 | 0.0353881 | 0.0307414 | 0.0400348 | 0.4602425 |
| 26 | Stress | 0 | 62 | 0.0335715 | 0.0314514 | 0.0356916 | NA |
| 27 | Stress | 1 | 10 | 0.0368375 | 0.0322057 | 0.0414693 | NA |
| 28 | Stress | 2 | 3 | 0.0344810 | 0.0072693 | 0.0616926 | NA |
| 29 | Stress | 3 | 4 | 0.0418125 | 0.0269657 | 0.0566593 | NA |
| 16 | Stress index | No | 57 | 0.0335675 | 0.0314676 | 0.0356675 | 0.1614113 |
| 17 | Stress index | Yes | 22 | 0.0366887 | 0.0325961 | 0.0407813 | 0.1614113 |
| 12 | Typer of skins | 1 | 13 | 0.0320609 | 0.0288211 | 0.0353006 | NA |
| 14 | Typer of skins | 2 | 5 | 0.0348000 | 0.0198962 | 0.0497038 | NA |
| 10 | Typer of skins | 3 | 40 | 0.0336067 | 0.0308605 | 0.0363529 | NA |
| 11 | Typer of skins | 4 | 11 | 0.0366312 | 0.0299479 | 0.0433144 | NA |
| 15 | Typer of skins | 5 | 6 | 0.0377500 | 0.0297853 | 0.0457147 | NA |
| 13 | Typer of skins | 6 | 4 | 0.0390000 | 0.0311238 | 0.0468762 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0357501 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.8706003 |
| Age\_stage | Age [30-40) | Age >=50 | 0.2350260 |
| Age\_stage | Age <30 | Age [40-50) | 0.0784666 |
| Age\_stage | Age <30 | Age >=50 | 0.9614645 |
| Age\_stage | Age [40-50) | Age >=50 | 0.2306654 |
| Race | Asian or Asian British | White | 0.2963495 |
| Race | Asian or Asian British | Black | 0.4552507 |
| Race | White | Black | 0.1384369 |
| Typer of skins | 3 | 4 | 0.4705359 |
| Typer of skins | 3 | 1 | 0.6417374 |
| Typer of skins | 3 | 6 | 0.1413499 |
| Typer of skins | 3 | 2 | 0.6386093 |
| Typer of skins | 3 | 5 | 0.2150190 |
| Typer of skins | 4 | 1 | 0.3389910 |
| Typer of skins | 4 | 6 | 0.4325990 |
| Typer of skins | 4 | 2 | 0.8649650 |
| Typer of skins | 4 | 5 | 0.8075307 |
| Typer of skins | 1 | 6 | 0.0539504 |
| Typer of skins | 1 | 2 | 0.7028478 |
| Typer of skins | 1 | 5 | 0.1244894 |
| Typer of skins | 6 | 2 | 0.7121545 |
| Typer of skins | 6 | 5 | 0.9148486 |
| Typer of skins | 2 | 5 | 0.9307359 |
| DASS\_21 | NORMAL | ANXIETY | 0.4154479 |
| DASS\_21 | NORMAL | STRESS | 0.3819012 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.3696264 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0730426 |
| DASS\_21 | NORMAL | DEPRESSION | 0.1261714 |
| DASS\_21 | ANXIETY | STRESS | 0.8571429 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.7105631 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.8571429 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.9398601 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.5613632 |
| DASS\_21 | STRESS | DEPRESSION | 0.1333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.2601399 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.1454545 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.1333333 |
| Stress | 0 | 1 | 0.2097798 |
| Stress | 0 | 2 | 0.8634180 |
| Stress | 0 | 3 | 0.0695913 |
| Stress | 1 | 2 | 1.0000000 |
| Stress | 1 | 3 | 0.2288198 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.5969255 |
| Anxiety | 0 | 4 | 0.0783444 |
| Anxiety | 0 | 1 | 0.3844683 |
| Anxiety | 0 | 3 | 0.4139470 |
| Anxiety | 2 | 4 | 0.5555556 |
| Anxiety | 2 | 1 | 1.0000000 |
| Anxiety | 2 | 3 | 0.8571429 |
| Anxiety | 4 | 1 | 0.6227533 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 1.0000000 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.2560397 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.5952784 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.3511150 |

## Tạo bảng và Forest plot với biến F-M\_mean

|  | Subgroup\_Category | Subgroup | n\_F-M\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.0780331 | 0.0701771 | 0.0858891 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.0815310 | 0.0692610 | 0.0938009 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.0849519 | 0.0741573 | 0.0957466 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.0866806 | 0.0575458 | 0.1158153 | NA |
| 30 | Anxiety | 0 | 63 | 0.0818971 | 0.0756860 | 0.0881082 | NA |
| 33 | Anxiety | 1 | 5 | 0.0798000 | 0.0635833 | 0.0960167 | NA |
| 31 | Anxiety | 2 | 5 | 0.0767000 | 0.0573066 | 0.0960934 | NA |
| 34 | Anxiety | 3 | 2 | 0.0706250 | -0.0326129 | 0.1738629 | NA |
| 32 | Anxiety | 4 | 4 | 0.0905232 | 0.0327555 | 0.1482909 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.0798009 | 0.0709299 | 0.0886719 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.0841380 | 0.0761726 | 0.0921034 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.0741250 | 0.0637707 | 0.0844793 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.0748333 | 0.0246818 | 0.1249848 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.0678750 | -0.0194802 | 0.1552302 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.0834915 | 0.0767597 | 0.0902234 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.0661875 | 0.0601337 | 0.0722413 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.0783750 | 0.0591880 | 0.0975620 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 0.0830937 | 0.0638975 | 0.1022898 | NA |
| 1 | Gender | female | 34 | 0.0822111 | 0.0737556 | 0.0906665 | 0.6729848 |
| 2 | Gender | male | 45 | 0.0811152 | 0.0739894 | 0.0882409 | 0.6729848 |
| 35 | Hypertension | No | 58 | 0.0795881 | 0.0738570 | 0.0853192 | 0.5404319 |
| 36 | Hypertension | Yes | 21 | 0.0871071 | 0.0741505 | 0.1000638 | 0.5404319 |
| 40 | Obesity | No | 71 | 0.0824276 | 0.0765894 | 0.0882658 | 0.6896596 |
| 41 | Obesity | Yes | 8 | 0.0741250 | 0.0637707 | 0.0844793 | 0.6896596 |
| 7 | Race | Asian or Asian British | 61 | 0.0836521 | 0.0772053 | 0.0900988 | NA |
| 9 | Race | Black | 3 | 0.0630000 | 0.0573081 | 0.0686919 | NA |
| 8 | Race | White | 15 | 0.0769056 | 0.0669738 | 0.0868373 | NA |
| 18 | Smoking | Non smoker | 65 | 0.0794989 | 0.0740052 | 0.0849925 | 0.2023817 |
| 19 | Smoking | Smoker | 14 | 0.0912810 | 0.0744115 | 0.1081504 | 0.2023817 |
| 26 | Stress | 0 | 62 | 0.0825688 | 0.0762625 | 0.0888751 | NA |
| 27 | Stress | 1 | 10 | 0.0697750 | 0.0641749 | 0.0753751 | NA |
| 28 | Stress | 2 | 3 | 0.1047810 | 0.0170408 | 0.1925212 | NA |
| 29 | Stress | 3 | 4 | 0.0785000 | 0.0604652 | 0.0965348 | NA |
| 16 | Stress index | No | 57 | 0.0834915 | 0.0767597 | 0.0902234 | 0.5536230 |
| 17 | Stress index | Yes | 22 | 0.0766519 | 0.0683482 | 0.0849557 | 0.5536230 |
| 12 | Typer of skins | 1 | 13 | 0.0766987 | 0.0660323 | 0.0873651 | NA |
| 14 | Typer of skins | 2 | 5 | 0.0690000 | 0.0488492 | 0.0891508 | NA |
| 10 | Typer of skins | 3 | 40 | 0.0845358 | 0.0765351 | 0.0925366 | NA |
| 11 | Typer of skins | 4 | 11 | 0.0770539 | 0.0637053 | 0.0904025 | NA |
| 15 | Typer of skins | 5 | 6 | 0.0903750 | 0.0605113 | 0.1202387 | NA |
| 13 | Typer of skins | 6 | 4 | 0.0830000 | 0.0192815 | 0.1467185 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.3779267 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.2485226 |
| Age\_stage | Age [30-40) | Age >=50 | 0.4828568 |
| Age\_stage | Age <30 | Age [40-50) | 1.0000000 |
| Age\_stage | Age <30 | Age >=50 | 0.9419530 |
| Age\_stage | Age [40-50) | Age >=50 | 0.9014649 |
| Race | Asian or Asian British | White | 0.6898204 |
| Race | Asian or Asian British | Black | 0.0715067 |
| Race | White | Black | 0.1221770 |
| Typer of skins | 3 | 4 | 0.3458901 |
| Typer of skins | 3 | 1 | 0.5902133 |
| Typer of skins | 3 | 6 | 0.4239510 |
| Typer of skins | 3 | 2 | 0.1060453 |
| Typer of skins | 3 | 5 | 0.6349394 |
| Typer of skins | 4 | 1 | 0.7498334 |
| Typer of skins | 4 | 6 | 0.6465253 |
| Typer of skins | 4 | 2 | 0.2775400 |
| Typer of skins | 4 | 5 | 0.3917856 |
| Typer of skins | 1 | 6 | 0.4609176 |
| Typer of skins | 1 | 2 | 0.0927726 |
| Typer of skins | 1 | 5 | 0.3568859 |
| Typer of skins | 6 | 2 | 0.5261685 |
| Typer of skins | 6 | 5 | 0.5211659 |
| Typer of skins | 2 | 5 | 0.1660106 |
| DASS\_21 | NORMAL | ANXIETY | 0.5069437 |
| DASS\_21 | NORMAL | STRESS | 0.1439012 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.6940471 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.6402549 |
| DASS\_21 | NORMAL | DEPRESSION | 0.3661630 |
| DASS\_21 | ANXIETY | STRESS | 1.0000000 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.5770953 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.8571429 |
| DASS\_21 | ANXIETY | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.0887518 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.2000000 |
| DASS\_21 | STRESS | DEPRESSION | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.8167139 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.4774915 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.2666667 |
| Stress | 0 | 1 | 0.2458292 |
| Stress | 0 | 2 | 0.1321247 |
| Stress | 0 | 3 | 0.5712657 |
| Stress | 1 | 2 | 0.0341146 |
| Stress | 1 | 3 | 0.1781525 |
| Stress | 2 | 3 | 0.4000000 |
| Anxiety | 0 | 2 | 0.9435969 |
| Anxiety | 0 | 4 | 0.5500392 |
| Anxiety | 0 | 1 | 0.5018217 |
| Anxiety | 0 | 3 | 0.7896106 |
| Anxiety | 2 | 4 | 0.8057008 |
| Anxiety | 2 | 1 | 0.5283593 |
| Anxiety | 2 | 3 | 0.8571429 |
| Anxiety | 4 | 1 | 1.0000000 |
| Anxiety | 4 | 3 | 0.8000000 |
| Anxiety | 1 | 3 | 0.5714286 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.4788044 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.5502094 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.9695549 |

## Tạo bảng và Forest plot với biến F-R\_mean

|  | Subgroup\_Category | Subgroup | n\_F-R\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 0.3298952 | 0.2963657 | 0.3634247 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 0.3646333 | 0.3060989 | 0.4231678 | NA |
| 4 | Age\_stage | Age <30 | 26 | 0.2850160 | 0.2392095 | 0.3308226 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 0.3829444 | 0.3181712 | 0.4477177 | NA |
| 30 | Anxiety | 0 | 63 | 0.3184741 | 0.2942526 | 0.3426956 | NA |
| 33 | Anxiety | 1 | 5 | 0.3470000 | 0.1824713 | 0.5115287 | NA |
| 31 | Anxiety | 2 | 5 | 0.3977750 | 0.2187519 | 0.5767981 | NA |
| 34 | Anxiety | 3 | 2 | 0.2726250 | -0.2117991 | 0.7570491 | NA |
| 32 | Anxiety | 4 | 4 | 0.3416250 | 0.0869188 | 0.5963312 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 0.3414762 | 0.3008319 | 0.3821205 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 0.3081384 | 0.2771944 | 0.3390824 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 0.3610260 | 0.2644824 | 0.4575697 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 0.5103333 | 0.3666322 | 0.6540345 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 0.3380833 | -1.1368953 | 1.8130619 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 0.3212140 | 0.2959425 | 0.3464855 | NA |
| 22 | DASS\_21 | STRESS | 4 | 0.2696250 | 0.1164546 | 0.4227954 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.3051250 | 0.1480817 | 0.4621683 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 0.3204583 | 0.2232571 | 0.4176596 | NA |
| 1 | Gender | female | 34 | 0.3165380 | 0.2783456 | 0.3547303 | 0.2934331 |
| 2 | Gender | male | 45 | 0.3319378 | 0.3017300 | 0.3621455 | 0.2934331 |
| 35 | Hypertension | No | 58 | 0.3073555 | 0.2825425 | 0.3321684 | 0.0136383 |
| 36 | Hypertension | Yes | 21 | 0.3748988 | 0.3223180 | 0.4274796 | 0.0136383 |
| 40 | Obesity | No | 71 | 0.3212857 | 0.2969474 | 0.3456239 | 0.3999399 |
| 41 | Obesity | Yes | 8 | 0.3610260 | 0.2644824 | 0.4575697 | 0.3999399 |
| 7 | Race | Asian or Asian British | 61 | 0.3293209 | 0.3020468 | 0.3565950 | NA |
| 9 | Race | Black | 3 | 0.3523333 | 0.0254041 | 0.6792626 | NA |
| 8 | Race | White | 15 | 0.3035944 | 0.2524357 | 0.3547532 | NA |
| 18 | Smoking | Non smoker | 65 | 0.3200942 | 0.2942955 | 0.3458930 | 0.2752173 |
| 19 | Smoking | Smoker | 14 | 0.3495262 | 0.2893817 | 0.4096707 | 0.2752173 |
| 26 | Stress | 0 | 62 | 0.3309091 | 0.3048223 | 0.3569960 | NA |
| 27 | Stress | 1 | 10 | 0.2799375 | 0.2165368 | 0.3433382 | NA |
| 28 | Stress | 2 | 3 | 0.4083333 | -0.0368082 | 0.8534748 | NA |
| 29 | Stress | 3 | 4 | 0.2896875 | 0.1666626 | 0.4127124 | NA |
| 16 | Stress index | No | 57 | 0.3212140 | 0.2959425 | 0.3464855 | 0.7455609 |
| 17 | Stress index | Yes | 22 | 0.3359223 | 0.2800583 | 0.3917864 | 0.7455609 |
| 12 | Typer of skins | 1 | 13 | 0.3011763 | 0.2505336 | 0.3518190 | NA |
| 14 | Typer of skins | 2 | 5 | 0.3417000 | 0.2064444 | 0.4769556 | NA |
| 10 | Typer of skins | 3 | 40 | 0.3295071 | 0.2970577 | 0.3619565 | NA |
| 11 | Typer of skins | 4 | 11 | 0.3235606 | 0.2326381 | 0.4144832 | NA |
| 15 | Typer of skins | 5 | 6 | 0.2887083 | 0.2148959 | 0.3625207 | NA |
| 13 | Typer of skins | 6 | 4 | 0.4010000 | 0.1702964 | 0.6317036 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.0542286 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.2974146 |
| Age\_stage | Age [30-40) | Age >=50 | 0.2645738 |
| Age\_stage | Age <30 | Age [40-50) | 0.0331639 |
| Age\_stage | Age <30 | Age >=50 | 0.0236520 |
| Age\_stage | Age [40-50) | Age >=50 | 0.8688310 |
| Race | Asian or Asian British | White | 0.2676100 |
| Race | Asian or Asian British | Black | 0.8857982 |
| Race | White | Black | 0.5460639 |
| Typer of skins | 3 | 4 | 0.7040141 |
| Typer of skins | 3 | 1 | 0.1419300 |
| Typer of skins | 3 | 6 | 0.3661353 |
| Typer of skins | 3 | 2 | 0.8701516 |
| Typer of skins | 3 | 5 | 0.4221199 |
| Typer of skins | 4 | 1 | 0.8826892 |
| Typer of skins | 4 | 6 | 0.5100891 |
| Typer of skins | 4 | 2 | 0.6086082 |
| Typer of skins | 4 | 5 | 0.9598232 |
| Typer of skins | 1 | 6 | 0.1477178 |
| Typer of skins | 1 | 2 | 0.2722117 |
| Typer of skins | 1 | 5 | 1.0000000 |
| Typer of skins | 6 | 2 | 0.7086241 |
| Typer of skins | 6 | 5 | 0.2849576 |
| Typer of skins | 2 | 5 | 0.3108629 |
| DASS\_21 | NORMAL | ANXIETY | 0.0078696 |
| DASS\_21 | NORMAL | STRESS | 0.4462744 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.7350267 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.6814605 |
| DASS\_21 | NORMAL | DEPRESSION | 0.6585615 |
| DASS\_21 | ANXIETY | STRESS | 0.0571429 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.0625935 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.0497460 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.2000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.7543299 |
| DASS\_21 | STRESS | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS | DEPRESSION | 0.5333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 1.0000000 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.9053250 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8143375 |
| Stress | 0 | 1 | 0.1176681 |
| Stress | 0 | 2 | 0.3708397 |
| Stress | 0 | 3 | 0.6177461 |
| Stress | 1 | 2 | 0.2577040 |
| Stress | 1 | 3 | 0.6151259 |
| Stress | 2 | 3 | 0.6285714 |
| Anxiety | 0 | 2 | 0.2670477 |
| Anxiety | 0 | 4 | 0.9047157 |
| Anxiety | 0 | 1 | 0.7676541 |
| Anxiety | 0 | 3 | 0.7169853 |
| Anxiety | 2 | 4 | 0.7109920 |
| Anxiety | 2 | 1 | 0.5958831 |
| Anxiety | 2 | 3 | 0.3809524 |
| Anxiety | 4 | 1 | 1.0000000 |
| Anxiety | 4 | 3 | 1.0000000 |
| Anxiety | 1 | 3 | 0.8450785 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.1084364 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.2444964 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.8043432 |

## Tạo bảng và Forest plot với biến F-C\_mean

|  | Subgroup\_Category | Subgroup | n\_F-C\_mean | Mean | CI\_lower | CI\_upper | P\_Value |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | Age\_stage | Age [30-40) | 33 | 1.167598 | 1.1170159 | 1.218180 | NA |
| 5 | Age\_stage | Age [40-50) | 14 | 1.135479 | 1.0289407 | 1.242016 | NA |
| 4 | Age\_stage | Age <30 | 26 | 1.121894 | 1.0489713 | 1.194817 | NA |
| 6 | Age\_stage | Age >=50 | 6 | 1.026972 | 0.8094663 | 1.244478 | NA |
| 30 | Anxiety | 0 | 63 | 1.139191 | 1.0949107 | 1.183471 | NA |
| 33 | Anxiety | 1 | 5 | 1.031900 | 0.9085805 | 1.155220 | NA |
| 31 | Anxiety | 2 | 5 | 1.153325 | 0.9464807 | 1.360169 | NA |
| 34 | Anxiety | 3 | 2 | 1.198375 | -0.9410322 | 3.337782 | NA |
| 32 | Anxiety | 4 | 4 | 1.166650 | 0.9800513 | 1.353249 | NA |
| 38 | BMI\_25\_30 | BMI [25-30) | 28 | 1.115498 | 1.0580494 | 1.172946 | NA |
| 37 | BMI\_25\_30 | BMI <25 | 43 | 1.141937 | 1.0861733 | 1.197700 | NA |
| 39 | BMI\_25\_30 | BMI >=30 | 8 | 1.177661 | 1.0247484 | 1.330574 | NA |
| 21 | DASS\_21 | ANXIETY | 3 | 1.085833 | 0.8242478 | 1.347419 | NA |
| 25 | DASS\_21 | DEPRESSION | 2 | 1.007375 | -0.6269606 | 2.641711 | NA |
| 20 | DASS\_21 | NORMAL | 57 | 1.144224 | 1.0967846 | 1.191664 | NA |
| 22 | DASS\_21 | STRESS | 4 | 1.133375 | 0.9138406 | 1.352909 | NA |
| 24 | DASS\_21 | STRESS ANXIETY | 4 | 0.997625 | 0.8379053 | 1.157345 | NA |
| 23 | DASS\_21 | STRESS ANXIETY DEPRESSION | 9 | 1.193497 | 1.0884740 | 1.298520 | NA |
| 1 | Gender | female | 34 | 1.129004 | 1.0700456 | 1.187963 | 0.9368096 |
| 2 | Gender | male | 45 | 1.141608 | 1.0902144 | 1.193002 | 0.9368096 |
| 35 | Hypertension | No | 58 | 1.122861 | 1.0826914 | 1.163032 | 0.1280938 |
| 36 | Hypertension | Yes | 21 | 1.172978 | 1.0783786 | 1.267578 | 0.1280938 |
| 40 | Obesity | No | 71 | 1.131510 | 1.0916674 | 1.171353 | 0.3753868 |
| 41 | Obesity | Yes | 8 | 1.177661 | 1.0247484 | 1.330574 | 0.3753868 |
| 7 | Race | Asian or Asian British | 61 | 1.153603 | 1.1091798 | 1.198025 | NA |
| 9 | Race | Black | 3 | 1.111500 | 0.8641224 | 1.358878 | NA |
| 8 | Race | White | 15 | 1.070283 | 0.9862346 | 1.154332 | NA |
| 18 | Smoking | Non smoker | 65 | 1.121989 | 1.0812269 | 1.162752 | 0.2221834 |
| 19 | Smoking | Smoker | 14 | 1.202086 | 1.0974389 | 1.306733 | 0.2221834 |
| 26 | Stress | 0 | 62 | 1.136984 | 1.0922855 | 1.181683 | NA |
| 27 | Stress | 1 | 10 | 1.102963 | 0.9882734 | 1.217652 | NA |
| 28 | Stress | 2 | 3 | 1.188533 | 0.9026340 | 1.474433 | NA |
| 29 | Stress | 3 | 4 | 1.167563 | 0.9387396 | 1.396385 | NA |
| 16 | Stress index | No | 57 | 1.144224 | 1.0967846 | 1.191664 | 0.5148447 |
| 17 | Stress index | Yes | 22 | 1.115351 | 1.0519382 | 1.178764 | 0.5148447 |
| 12 | Typer of skins | 1 | 13 | 1.097644 | 0.9887242 | 1.206564 | NA |
| 14 | Typer of skins | 2 | 5 | 1.135200 | 1.0326080 | 1.237792 | NA |
| 10 | Typer of skins | 3 | 40 | 1.136161 | 1.0796270 | 1.192695 | NA |
| 11 | Typer of skins | 4 | 11 | 1.122721 | 1.0593569 | 1.186086 | NA |
| 15 | Typer of skins | 5 | 6 | 1.227625 | 0.9373798 | 1.517870 | NA |
| 13 | Typer of skins | 6 | 4 | 1.162750 | 0.9545646 | 1.370935 | NA |

###Wilcox pairwise test cho các sub group có >2 level

## Group Gender does not have more than 2 unique levels. Skipping.

## Group Stress index does not have more than 2 unique levels. Skipping.

## Group Smoking does not have more than 2 unique levels. Skipping.

## Group Hypertension does not have more than 2 unique levels. Skipping.

## Group Obesity does not have more than 2 unique levels. Skipping.

| Group | Group1 | Group2 | P\_Value |
| --- | --- | --- | --- |
| Age\_stage | Age [30-40) | Age <30 | 0.2743406 |
| Age\_stage | Age [30-40) | Age [40-50) | 0.3884978 |
| Age\_stage | Age [30-40) | Age >=50 | 0.0827614 |
| Age\_stage | Age <30 | Age [40-50) | 0.8759498 |
| Age\_stage | Age <30 | Age >=50 | 0.3843847 |
| Age\_stage | Age [40-50) | Age >=50 | 0.2149831 |
| Race | Asian or Asian British | White | 0.0582146 |
| Race | Asian or Asian British | Black | 0.5778788 |
| Race | White | Black | 0.5532072 |
| Typer of skins | 3 | 4 | 0.7135907 |
| Typer of skins | 3 | 1 | 0.5345167 |
| Typer of skins | 3 | 6 | 0.6675528 |
| Typer of skins | 3 | 2 | 0.8991698 |
| Typer of skins | 3 | 5 | 0.1968083 |
| Typer of skins | 4 | 1 | 0.4007612 |
| Typer of skins | 4 | 6 | 0.5135147 |
| Typer of skins | 4 | 2 | 0.9096697 |
| Typer of skins | 4 | 5 | 0.1801875 |
| Typer of skins | 1 | 6 | 0.5710636 |
| Typer of skins | 1 | 2 | 0.4594955 |
| Typer of skins | 1 | 5 | 0.2192893 |
| Typer of skins | 6 | 2 | 1.0000000 |
| Typer of skins | 6 | 5 | 0.4761905 |
| Typer of skins | 2 | 5 | 0.2467532 |
| DASS\_21 | NORMAL | ANXIETY | 0.5078503 |
| DASS\_21 | NORMAL | STRESS | 0.9534812 |
| DASS\_21 | NORMAL | STRESS ANXIETY DEPRESSION | 0.3545399 |
| DASS\_21 | NORMAL | STRESS ANXIETY | 0.0752199 |
| DASS\_21 | NORMAL | DEPRESSION | 0.2849571 |
| DASS\_21 | ANXIETY | STRESS | 0.7212767 |
| DASS\_21 | ANXIETY | STRESS ANXIETY DEPRESSION | 0.2818182 |
| DASS\_21 | ANXIETY | STRESS ANXIETY | 0.4755327 |
| DASS\_21 | ANXIETY | DEPRESSION | 0.8000000 |
| DASS\_21 | STRESS | STRESS ANXIETY DEPRESSION | 0.5365338 |
| DASS\_21 | STRESS | STRESS ANXIETY | 0.2453835 |
| DASS\_21 | STRESS | DEPRESSION | 0.5333333 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | STRESS ANXIETY | 0.0445685 |
| DASS\_21 | STRESS ANXIETY DEPRESSION | DEPRESSION | 0.2181818 |
| DASS\_21 | STRESS ANXIETY | DEPRESSION | 0.8000000 |
| Stress | 0 | 1 | 0.5962763 |
| Stress | 0 | 2 | 0.5416853 |
| Stress | 0 | 3 | 0.7673080 |
| Stress | 1 | 2 | 0.3518798 |
| Stress | 1 | 3 | 0.3558476 |
| Stress | 2 | 3 | 1.0000000 |
| Anxiety | 0 | 2 | 0.8231545 |
| Anxiety | 0 | 4 | 0.6620936 |
| Anxiety | 0 | 1 | 0.1124105 |
| Anxiety | 0 | 3 | 0.6077261 |
| Anxiety | 2 | 4 | 1.0000000 |
| Anxiety | 2 | 1 | 0.4019654 |
| Anxiety | 2 | 3 | 0.5577377 |
| Anxiety | 4 | 1 | 0.1111111 |
| Anxiety | 4 | 3 | 1.0000000 |
| Anxiety | 1 | 3 | 0.5714286 |
| BMI\_25\_30 | BMI <25 | BMI [25-30) | 0.8183524 |
| BMI\_25\_30 | BMI <25 | BMI >=30 | 0.5003727 |
| BMI\_25\_30 | BMI [25-30) | BMI >=30 | 0.2861549 |