Final-term Project
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Introduction:

This final report is to report TFL (Table, Figure, Listing). All eligible patients had either Placebo or Drug B for their Treatment Group with all missing observations being removed. Only the first ten observations are listed. A Table-1 is presented, which is displaying the Age, BMI, Weight Status, and Average Cost summary statistics information for all eligible patients and separately for Placebo group and Drug B group. Figure 1 is presenting the histogram and Q-Q plot for distribution of age stratified by treatment group. Figure 2 is presenting the distribution of BMI stratified by sex and treatment group for adult patients older than 17 and younger than 70 years old.

Dataset:

xiz4024_forfinal.sas7bdat

Methods:

Unequal variance two-sample Student's t-test was used to test if there is any difference for the mean BMI score between Placebo and Drug B group. Chi-Square test was used to examine if there was any association between treatment group and different weight status. The Wilcoxon rank-sum test was applied to compare the distribution of average costs between the Placebo and Drug B groups. All analyses were performed in SAS9.4.

Results:

List of the first 10 patients

Obs	Unique Subject ID	Treatment Group	AGE	SEX	BMI	Weight Status	Average Cost	Study end date
1	0000048	Placebo	34	M	17.2	Underweight		01OCT2024
2	0000051	Placebo	25	F	9.6	Underweight	$100.95	01OCT2024
3	0000056	Placebo	74	F	21.0	Normal Weight	$23.58	01OCT2024
4	0000058	Placebo	22	F	23.2	Normal Weight	$33.28	01OCT2024
5	0000061	Drug B	50	F	25.2	Overweight	$54.68	01OCT2024
6	0000062	Drug B	51	F	30.3	Obese	$58.41	01OCT2024
7	0000064	Placebo	44	M	24.3	Normal Weight	$41.36	01OCT2024
8	0000065	Drug B	17	M	23.6	Normal Weight	$98.31	01OCT2024
9	0000067	Drug B	52	M	26.1	Overweight	$64.65	01OCT2024
10	0000068	Placebo	26	M	30.6	Obese	$65.57	01OCT2024

Table-1

	Treatment Group			
	Drug B (N=5884)	Placebo (N=5840)	Total (N=11724)	P-value
Age				
N (Missing)	5785 (99)	5733 (107)	11518 (206)	
Mean (SD)	41.3 (23.70)	41.3 (23.68)	41.3 (23.69)	
Median (Range)	41.0 (0.0, 84.0)	41.0 (0.0, 83.0)	41.0 (0.0, 84.0)	
BMI				0.1089[1]
N (Missing)	5683 (201)	5635 (205)	11318 (406)	
Mean (SD)	21.5 (4.92)	21.3 (4.92)	21.4 (4.92)	
Median (Range)	21.4 (3.4, 41.2)	21.3 (3.2, 38.0)	21.3 (3.2, 41.2)	
Weight Status, n (%)				0.2511[2]
Morbidly Obese	2 (0.0%)	0 (0.0%)	2 (0.0%)	
Normal Weight	2851 (50.2%)	2798 (49.7%)	5649 (49.9%)	
Obese	231 (4.1%)	243 (4.3%)	474 (4.2%)	
Overweight	1091 (19.2%)	1030 (18.3%)	2121 (18.7%)	
Underweight	1508 (26.5%)	1564 (27.8%)	3072 (27.1%)	
Missing	201	205	406	
Average Cost				0.0330[3]
N (Missing)	5884 (0)	5839 (1)	11723 (1)	
Mean (SD)	64.4 (24.70)	63.3 (24.37)	63.9 (24.54)	
Median (Range)	63.6 (2.9, 194.5)	62.8 (0.8, 199.0)	63.2 (0.8, 199.0)	

[1]Unequal variance two sample t-test; [2]Chi-Square p-value; [3]Wilcoxon rank sum p-value;

Figure-1
Distribution of Age stratified by Treatment group
Variable:
AGE

Distribution of AGE

Q-Q Plots of AGE

Figure-2

Distribution of BMI by Sex and Treatment Group
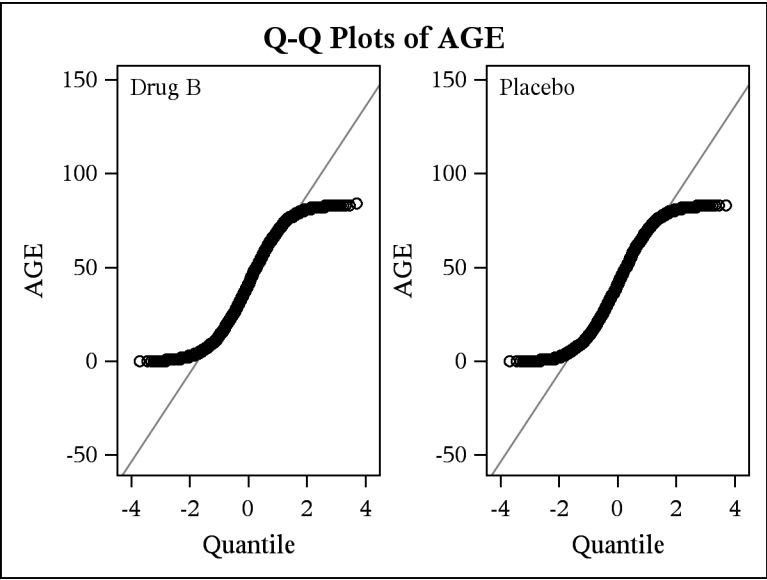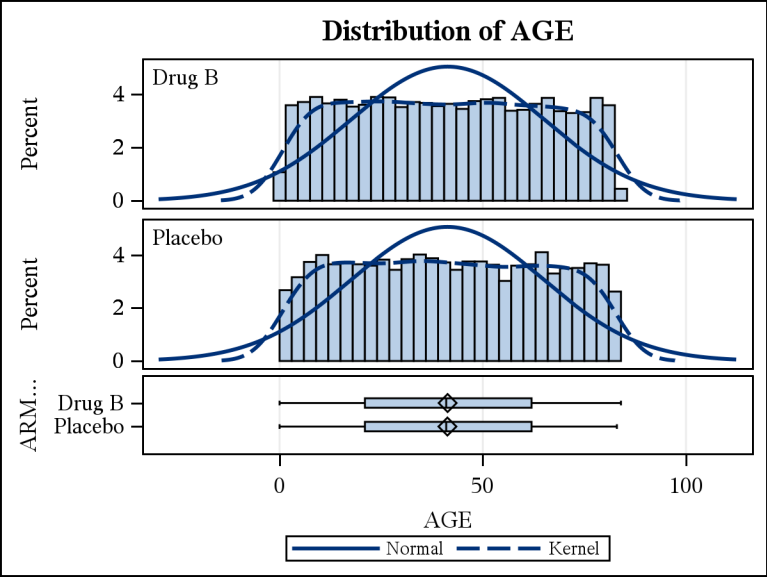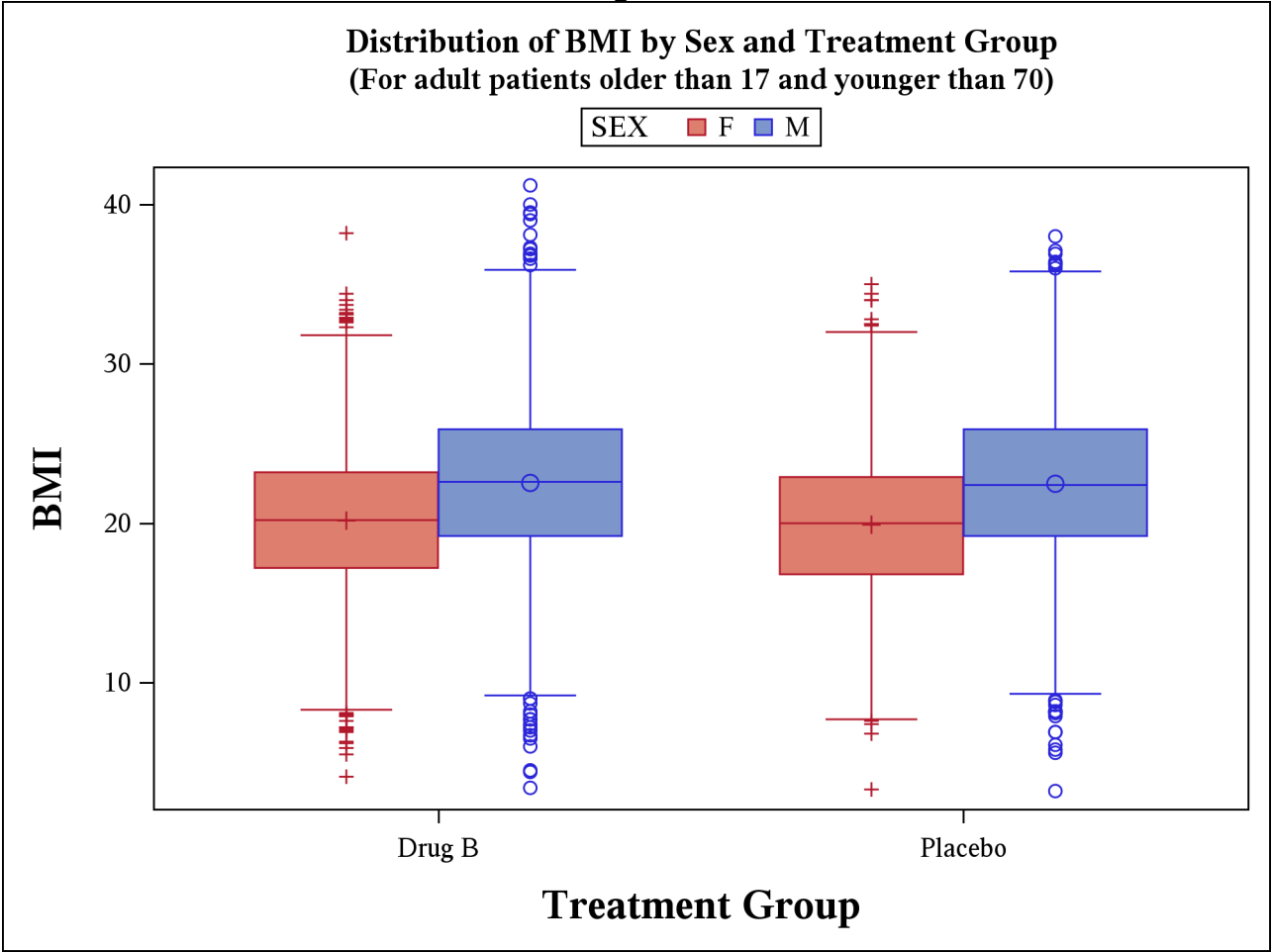(For adult patients older than 17 and younger than 70)

Spearman Correlation Coefficient between BMI and Weight, Height, Age
Spearman Correlation Coefficient between BMI and WEIGHT HEIGHT AGE

Variable	N	Mean	SD	Median	Min	Max	Spearman Coefficient (95% CI)	*P*-value[1]
BMI	11318	21.38	4.92	21.30	3.20	41.20		
WEIGHT	11512	64.75	19.78	63.01	7.83	155.77	0.83 (0.83 - 0.84)	<.0001
HEIGHT	11530	1.73	0.14	1.73	1.23	2.18	0.18 (0.16 - 0.20)	<.0001
AGE	11518	41.33	23.69	41.00	0.00	84.00	-0.01 (-0.03 - 0.01)	0.4383

[1] *P* value of Spearman correlation coefficient, testing Ho: *Rho* **= 0;**

Note:
 1. Only non-missing values are used within each pairs of variable for correlation;
 2. P values and CIs are obtained with Fisher's Z-transformation with biasadj=no;
 3. Correlation coefficient (*r*) is a measure of strength of correlation. As a rule-of-thumb, correlation strength can be categorized as:
   0.00 - 0.19: very weak;
   0.20 - 0.39: weak;
   0.40 - 0.59: moderate;
   0.60 - 0.79: strong;
   0.80 - 1.00: very strong;

Scatter plot with regression line and 95% confidence band