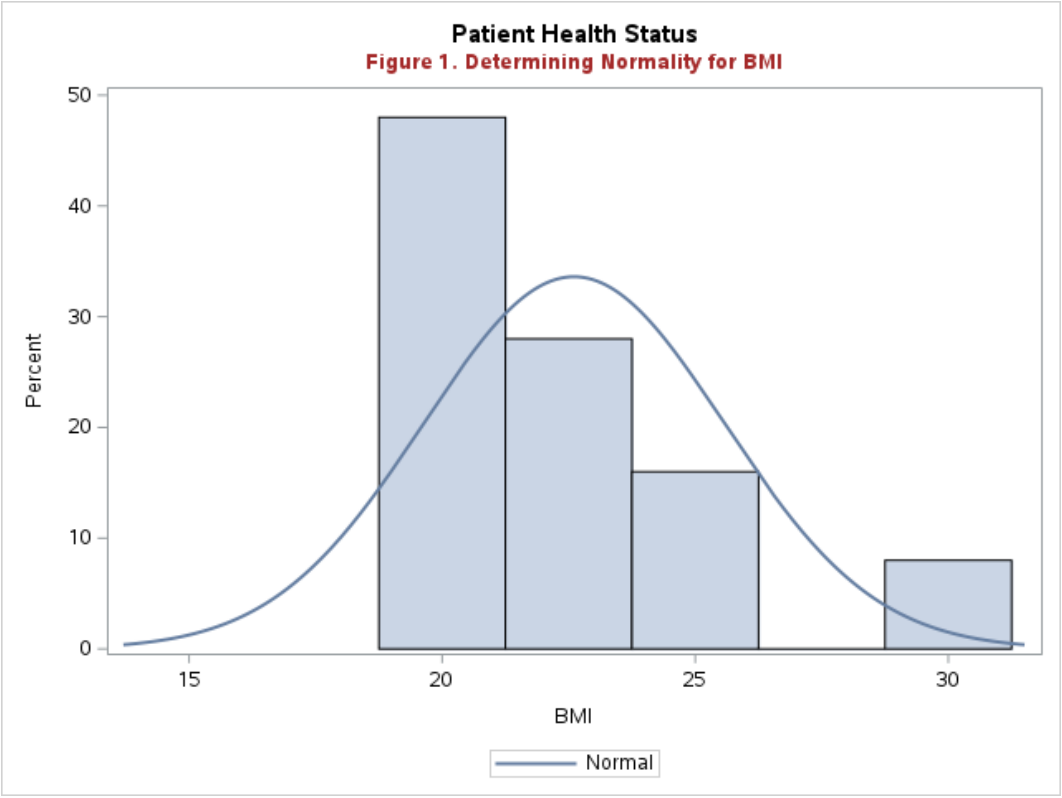
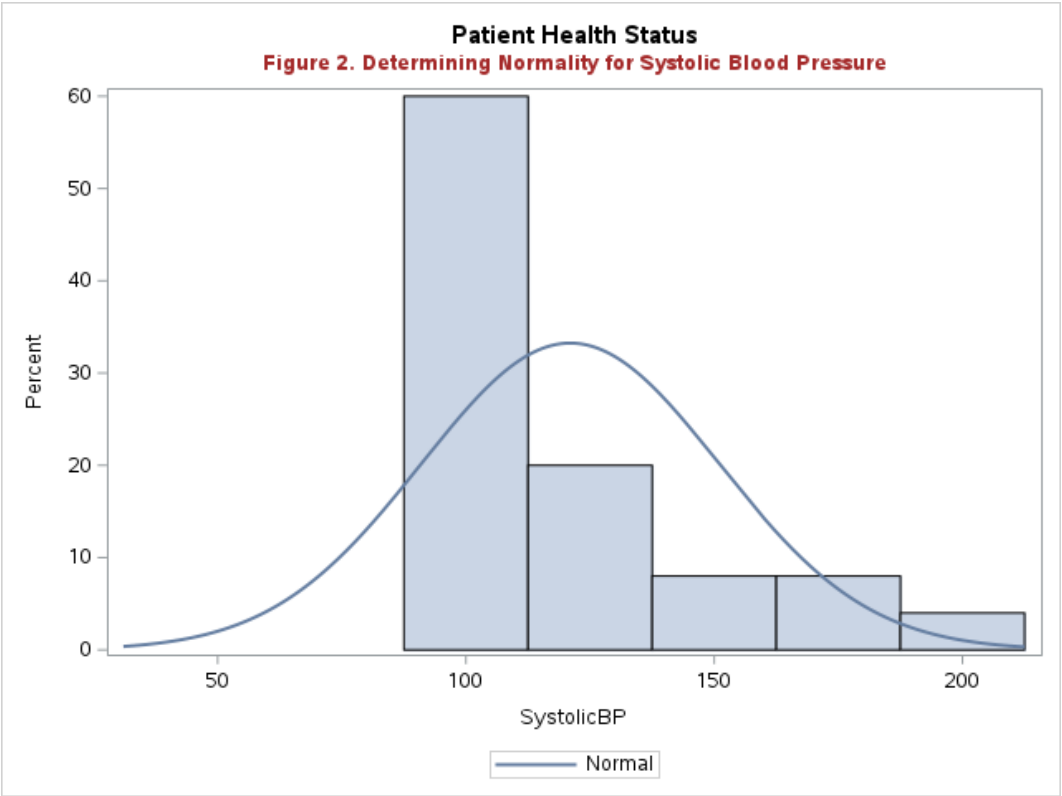
## Patient Health Status

| Obs | Name | Diabetes | SystolicBP | DiastolicBP | CVD | Smoking | MealsADay | Vegetarian | Height | Weight | BMI | WeightStatus | Gender | Age | MaritalStatus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Joanne | No | 115 | 70 | No | No | 3 | Yes | 1.65 | 58 | 21.3 | Normal weight | Female | 45 | Married |
| 2 | Mary | No | 105 | 65 | No | No | 3 | No | 1.49 | 45 | 20.3 | Normal weight | Female | 60 | Married |
| 3 | Lynda | No | 100 | 65 | No | No | 3 | Yes | 1.65 | 58 | 21.3 | Normal weight | Female | 29 | Single |
| 4 | Edward | No | 100 | 65 | No | No | 3 | No | 1.76 | 65 | 20.98 | Normal weight | Male | 35 | Married |
| 5 | Mia | No | 105 | 65 | No | No | 3 | No | 1.49 | 45 | 20.3 | Normal weight | Female | 31 | Married |
| 6 | Keith | No | 129 | 84 | No | Yes | 3 | Yes | 1.8 | 73 | 22.5 | Normal weight | Male | 28 | Married |
| 7 | Jake | Yes | 111 | 75 | No | Yes | 4 | Yes | 1.76 | 80 | 25.8 | Obese | Male | 52 | Married |
| 8 | Kelvin | No | 100 | 65 | No | No | 3 | No | 1.76 | 65 | 20.98 | Normal weight | Male | 43 | Single |
| 9 | Richard | No | 102 | 66 | No | No | 3 | Yes | 1.82 | 77 | 23.25 | Normal weight | Male | 47 | Married |
| 10 | Lily | Yes | 210 | 120 | Yes | Yes | 4 | Yes | 1.64 | 75 | 30.43 | Obese | Female | 51 | Married |
| 11 | Janet | No | 115 | 70 | No | Yes | 3 | No | 1.57 | 52 | 21.1 | Normal weight | Female | 61 | Married |
| 12 | Anna | No | 105 | 65 | No | No | 3 | No | 1.49 | 45 | 20.3 | Normal weight | Female | 45 | Married |
| 13 | Steven | Yes | 179 | 109 | Yes | Yes | 3 | Yes | 1.82 | 84 | 25.4 | Overweight | Male | 39 | Married |
| 14 | Oscar | Yes | 180 | 110 | Yes | Yes | 6 | Yes | 1.6 | 78 | 30.46 | Obese | Male | 44 | Married |
| 15 | Billie | No | 100 | 65 | No | No | 3 | No | 1.76 | 65 | 20.98 | Normal weight | Female | 35 | Single |
| 16 | Adele | Yes | 159 | 109 | Yes | Yes | 4 | Yes | 1.57 | 62 | 25.15 | Overweight | Female | 53 | Single |
| 17 | Lee | Yes | 145 | 100 | Yes | Yes | 4 | Yes | 1.69 | 73 | 25.56 | Overweight | Male | 48 | Married |
| 18 | Sam | No | 100 | 65 | No | No | 3 | No | 1.76 | 65 | 20.98 | Normal weight | Male | 37 | Married |
| 19 | Queine | No | 100 | 65 | No | No | 3 | No | 1.65 | 58 | 21.3 | Normal weight | Female | 30 | Single |
| 20 | Jen | No | 108 | 62 | No | No | 3 | No | 1.55 | 59 | 20.4 | Normal weight | Female | 25 | Single |
| 21 | Samuel | No | 112 | 68 | No | No | 3 | Yes | 1.75 | 75 | 22.6 | Normal weight | Male | 22 | Married |
| 22 | Dora | No | 105 | 65 | No | No | 3 | No | 1.49 | 45 | 20.3 | Normal weight | Female | 36 | Married |
| 23 | Terance | No | 105 | 65 | No | No | 3 | No | 1.49 | 45 | 20.3 | Normal weight | Male | 52 | Married |
| 24 | Chloe | No | 120 | 80 | No | Yes | 2 | Yes | 1.7 | 66 | 22.84 | Normal weight | Female | 45 | Married |
| 25 | Kendall | No | 115 | 70 | No | No | 3 | No | 1.72 | 69 | 20.3 | Normal weight | Male | 24 | Single |




**Patient Health Status**

**Figure 3. Shapiro-Wilk Test**

**The UNIVARIATE Procedure**
**Variable: BMI (BMI)**

| Moments | | | |
|---|---|---|---|
| **N** | 25 | **Sum Weights** | 25 |
| **Mean** | 22.6044 | **Sum Observations** | 565.11 |
| **Std Deviation** | 2.96732073 | **Variance** | 8.80499233 |
| **Skewness** | 1.64632598 | **Kurtosis** | 2.16112791 |
| **Uncorrected SS** | 12985.2923 | **Corrected SS** | 211.319816 |

| Moments | | | |
|---|---|---|---|
| Coeff Variation | 13.127182 | Std Error Mean | 0.59346415 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| Location | | Variability | |
| Mean | 22.60440 | Std Deviation | 2.96732 |
| Median | 21.30000 | Variance | 8.80499 |
| Mode | 20.30000 | Range | 10.16000 |
| | | Interquartile Range | 2.85000 |

| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| Student's t | t | 38.08891 | Pr > \|t\| | <.0001 |
| Sign | M | 12.5 | Pr >= \|M\| | <.0001 |
| Signed Rank | S | 162.5 | Pr >= \|S\| | <.0001 |

| Tests for Normality | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| Shapiro-Wilk | W | 0.75748 | Pr < W | <0.0001 |
| Kolmogorov-Smirnov | D | 0.269882 | Pr > D | <0.0100 |
| Cramer-von Mises | W-Sq | 0.378118 | Pr > W-Sq | <0.0050 |
| Anderson-Darling | A-Sq | 2.189062 | Pr > A-Sq | <0.0050 |

| Quantiles (Definition 5) | |
|---|---|
| Level | Quantile |
| 100% Max | 30.46 |
| 99% | 30.46 |
| 95% | 30.43 |
| 90% | 25.80 |
| 75% Q3 | 23.25 |
| 50% Median | 21.30 |
| 25% Q1 | 20.40 |
| 10% | 20.30 |
| 5% | 20.30 |
| 1% | 20.30 |
| 0% Min | 20.30 |

| Extreme Observations | | | |
|---|---|---|---|
| Lowest | | Highest | |
| Value | Obs | Value | Obs |
| 20.3 | 25 | 25.40 | 13 |
| 20.3 | 23 | 25.56 | 17 |
| 20.3 | 22 | 25.80 | 7 |
| 20.3 | 12 | 30.43 | 10 |
| 20.3 | 5 | 30.46 | 14 |

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## Patient Health Status

### Figure 3. Shapiro-Wilk Test

**The UNIVARIATE Procedure**
**Variable: SystolicBP (SystolicBP)**

| Moments | | | |
|---|---|---|---|
| N | 25 | Sum Weights | 25 |
| Mean | 121 | Sum Observations | 3025 |
| Std Deviation | 29.9972221 | Variance | 899.833333 |
| Skewness | 1.82415806 | Kurtosis | 2.55225062 |
| Uncorrected SS | 387621 | Corrected SS | 21596 |
| Coeff Variation | 24.7910926 | Std Error Mean | 5.99944442 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| Location | | Variability | |
| Mean | 121.0000 | Std Deviation | 29.99722 |
| Median | 108.0000 | Variance | 899.83333 |
| Mode | 100.0000 | Range | 110.00000 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| Location | | Variability | |
| | | Interquartile Range | 18.00000 |

| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| Student's t | t | 20.16853 | Pr > \|t\| | <.0001 |
| Sign | M | 12.5 | Pr >= \|M\| | <.0001 |
| Signed Rank | S | 162.5 | Pr >= \|S\| | <.0001 |

| Tests for Normality | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| Shapiro-Wilk | W | 0.713657 | Pr < W | <0.0001 |
| Kolmogorov-Smirnov | D | 0.299267 | Pr > D | <0.0100 |
| Cramer-von Mises | W-Sq | 0.546547 | Pr > W-Sq | <0.0050 |
| Anderson-Darling | A-Sq | 2.887321 | Pr > A-Sq | <0.0050 |

| Quantiles (Definition 5) | |
|---|---|
| Level | Quantile |
| 100% Max | 210 |
| 99% | 210 |
| 95% | 180 |
| 90% | 179 |
| 75% Q3 | 120 |
| 50% Median | 108 |
| 25% Q1 | 102 |
| 10% | 100 |
| 5% | 100 |
| 1% | 100 |
| 0% Min | 100 |

| Extreme Observations | | | |
|---|---|---|---|
| Lowest | | Highest | |
| Value | Obs | Value | Obs |
| 100 | 19 | 145 | 17 |
| 100 | 18 | 159 | 16 |
| 100 | 15 | 179 | 13 |
| 100 | 8 | 180 | 14 |
| 100 | 4 | 210 | 10 |

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## Patient Health Status

### Difference between 2 Independent Population

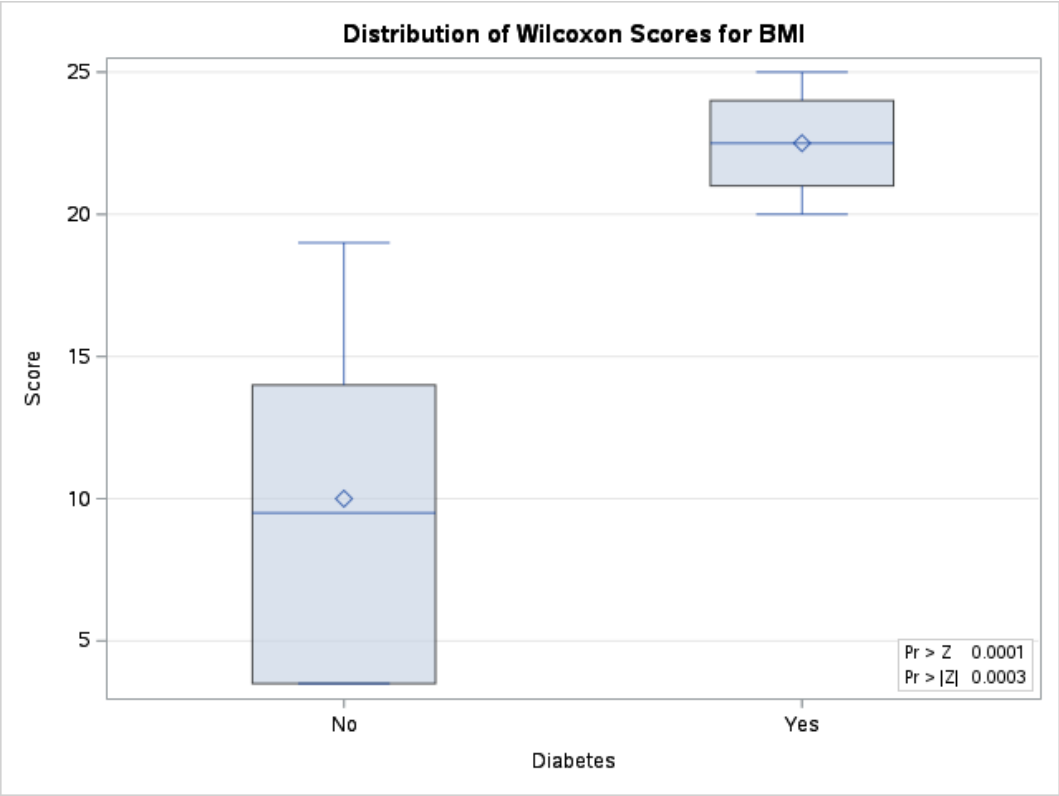
### Figure 4. Wilcoxon Rank Sum Test

**The NPAR1WAY Procedure**

| Wilcoxon Scores (Rank Sums) for Variable BMI Classified by Variable Diabetes | | | | | |
|---|---|---|---|---|---|
| Diabetes | N | Sum of Scores | Expected Under H0 | Std Dev Under H0 | Mean Score |
| No | 19 | 190.0 | 247.0 | 15.567434 | 10.00 |
| Yes | 6 | 135.0 | 78.0 | 15.567434 | 22.50 |
| Average scores were used for ties. | | | | | |

| Wilcoxon Two-Sample Test | | | | | |
|---|---|---|---|---|---|
| | | | | t Approximation | |
| Statistic | Z | Pr > Z | Pr > \|Z\| | Pr > Z | Pr > \|Z\| |
| 135.0000 | 3.6294 | 0.0001 | 0.0003 | 0.0007 | 0.0013 |
| Z includes a continuity correction of 0.5. | | | | | |

| Kruskal-Wallis Test | | |
|---|---|---|
| Chi-Square | DF | Pr > ChiSq |
| 13.4065 | 1 | 0.0003 |

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**Patient Health Status**

**Difference between 2 Independent Population**

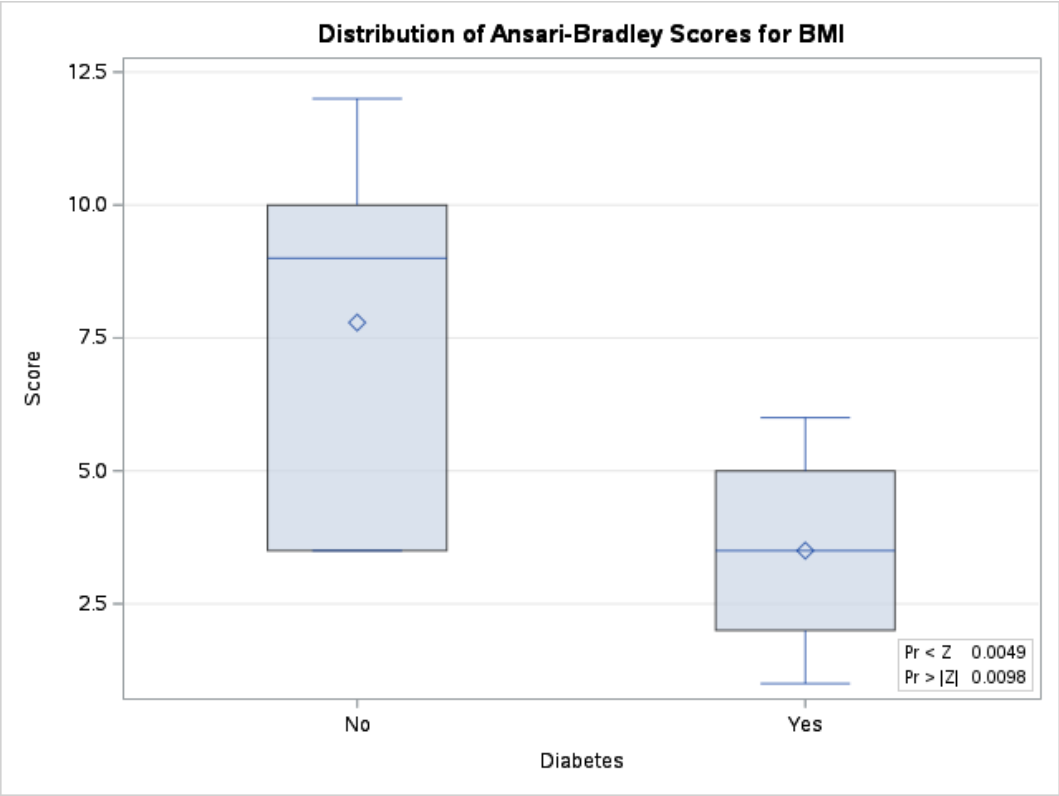
**Figure 5. Ansari-Bradley Test**

**The NPAR1WAY Procedure**

| Ansari-Bradley Scores for Variable BMI Classified by Variable Diabetes | | | | | |
|---|---|---|---|---|---|
| Diabetes | N | Sum of Scores | Expected Under H0 | Std Dev Under H0 | Mean Score |
| No | 19 | 148.0 | 128.440 | 7.575711 | 7.789474 |
| Yes | 6 | 21.0 | 40.560 | 7.575711 | 3.500000 |
| Average scores were used for ties. | | | | | |

| Ansari-Bradley Two-Sample Test | | | |
|---|---|---|---|
| Statistic | Z | Pr < Z | Pr > \|Z\| |
| 21.0000 | -2.5819 | 0.0049 | 0.0098 |

| Ansari-Bradley One-Way Analysis | | |
|---|---|---|
| Chi-Square | DF | Pr > ChiSq |
| 6.6664 | 1 | 0.0098 |

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**Patient Health Status**

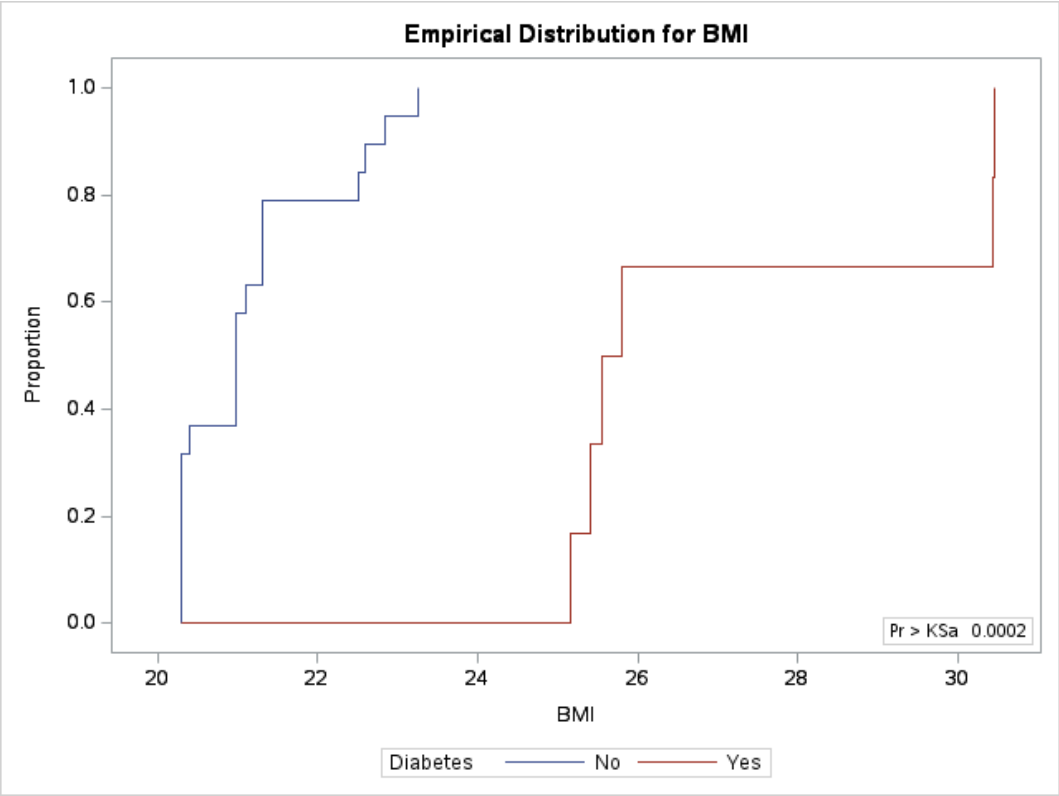
**Difference between 2 Independent Population**

**Figure 6. Kolmogorov-Smirnov Test**

**The NPAR1WAY Procedure**

| Kolmogorov-Smirnov Test for Variable BMI Classified by Variable Diabetes | | | |
|---|---|---|---|
| **Diabetes** | **N** | **EDF at Maximum** | **Deviation from Mean at Maximum** |
| **No** | 19 | 1.000 | 1.046136 |
| **Yes** | 6 | 0.000 | -1.861612 |
| **Total** | 25 | 0.760 | |
| **Maximum Deviation Occurred at Observation 9** | | | |
| **Value of BMI at Maximum = 23.250** | | | |

| Kolmogorov-Smirnov Two-Sample Test (Asymptotic) | | | |
|---|---|---|---|
| **KS** | 0.427083 | **D** | 1.000000 |
| **KSa** | 2.135416 | **Pr > KSa** | 0.0002 |




| Cramer-von Mises Test for Variable BMI Classified by Variable Diabetes | | |
|---|---|---|
| Diabetes | N | Summed Deviation from Mean |
| No | 19 | 0.406174 |
| Yes | 6 | 1.286219 |

| Cramer-von Mises Statistics (Asymptotic) | | | |
|---|---|---|---|
| CM | 0.067696 | CMa | 1.692393 |

| Kuiper Test for Variable BMI Classified by Variable Diabetes | | |
|---|---|---|
| Diabetes | N | Deviation from Mean |
| No | 19 | 1.0 |
| Yes | 6 | 0.0 |

| Kuiper Two-Sample Test (Asymptotic) | | | | | |
|---|---|---|---|---|---|
| K | 1.000000 | Ka | 2.135416 | Pr > Ka | 0.0038 |

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## Patient Health Status

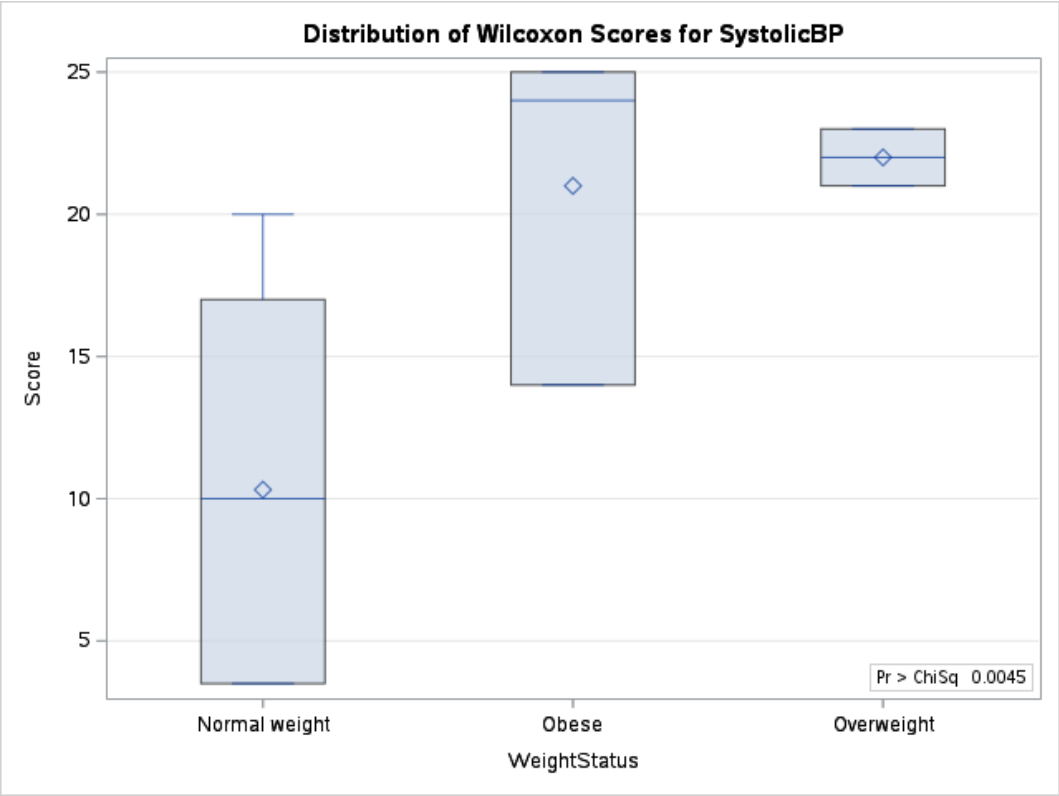
### Difference between 3 or More Independent Population

### Figure 7. Kruskal-Wallis Test

**The NPAR1WAY Procedure**

| Wilcoxon Scores (Rank Sums) for Variable SystolicBP Classified by Variable WeightStatus | | | | | |
|---|---|---|---|---|---|
| WeightStatus | N | Sum of Scores | Expected Under H0 | Std Dev Under H0 | Mean Score |
| Normal weight | 19 | 196.0 | 247.0 | 15.536892 | 10.315789 |
| Obese | 3 | 63.0 | 39.0 | 11.821802 | 21.000000 |
| Overweight | 3 | 66.0 | 39.0 | 11.821802 | 22.000000 |
| Average scores were used for ties. | | | | | |

| Kruskal-Wallis Test | | |
|---|---|---|
| Chi-Square | DF | Pr > ChiSq |
| 10.8032 | 2 | 0.0045 |




## Patient Health Status
### Testing Correlations
### Figure 8. Spearman's Correlation Test

**The CORR Procedure**

| 5 Variables: | Age MealsADay SystolicBP DiastolicBP BMI |
|---|---|

**Simple Statistics**

| Variable | N | Mean | Std Dev | Median | Minimum | Maximum | Label |
|---|---|---|---|---|---|---|---|
| Age | 25 | 40.68000 | 11.08197 | 43.00000 | 22.00000 | 61.00000 | Age |
| MealsADay | 25 | 3.24000 | 0.72342 | 3.00000 | 2.00000 | 6.00000 | MealsADay |
| SystolicBP | 25 | 121.00000 | 29.99722 | 108.00000 | 100.00000 | 210.00000 | SystolicBP |
| DiastolicBP | 25 | 76.32000 | 17.93906 | 66.00000 | 62.00000 | 120.00000 | DiastolicBP |
| BMI | 25 | 22.60440 | 2.96732 | 21.30000 | 20.30000 | 30.46000 | BMI |

**Spearman Correlation Coefficients, N = 25**
**Prob > |r| under H0: Rho=0**

| | Age | MealsADay | SystolicBP | DiastolicBP | BMI |
|---|---|---|---|---|---|
| Age<br>Age | 1.00000 | 0.35707<br>0.0797 | 0.27655<br>0.1808 | 0.33923<br>0.0971 | 0.24160<br>0.2446 |
| MealsADay<br>MealsADay | 0.35707<br>0.0797 | 1.00000 | 0.45741<br>0.0215 | 0.52890<br>0.0066 | 0.56518<br>0.0032 |
| SystolicBP<br>SystolicBP | 0.27655<br>0.1808 | 0.45741<br>0.0215 | 1.00000 | 0.87072<br><.0001 | 0.57384<br>0.0027 |
| DiastolicBP<br>DiastolicBP | 0.33923<br>0.0971 | 0.52890<br>0.0066 | 0.87072<br><.0001 | 1.00000 | 0.79954<br><.0001 |
| BMI<br>BMI | 0.24160<br>0.2446 | 0.56518<br>0.0032 | 0.57384<br>0.0027 | 0.79954<br><.0001 | 1.00000 |

## Patient Health Status
### Testing Goodness of Fit
### Figure 9. Chi-Square Test

**The FREQ Procedure**

| Frequency<br>Percent<br>Row Pct<br>Col Pct |
|---|

**Table of Gender by Vegetarian**

| Gender(Gender) | Vegetarian(Vegetarian) No | Yes | Total |
|---|---|---|---|
| Female | 8<br>32.00<br>61.54 | 5<br>20.00<br>38.46 | 13<br>52.00 |

| Table of Gender by Vegetarian | | | |
|---|---|---|---|
| | Vegetarian(Vegetarian) | | |
| Gender(Gender) | No | Yes | Total |
| | 61.54 | 41.67 | |
| Male | 5<br>20.00<br>41.67<br>38.46 | 7<br>28.00<br>58.33<br>58.33 | 12<br>48.00 |
| Total | 13<br>52.00 | 12<br>48.00 | 25<br>100.00 |

**Statistics for Table of Gender by Vegetarian**

| Statistic | DF | Value | Prob |
|---|---|---|---|
| Chi-Square | 1 | 0.9872 | 0.3204 |
| Likelihood Ratio Chi-Square | 1 | 0.9935 | 0.3189 |
| Continuity Adj. Chi-Square | 1 | 0.3516 | 0.5532 |
| Mantel-Haenszel Chi-Square | 1 | 0.9477 | 0.3303 |
| Phi Coefficient | | 0.1987 | |
| Contingency Coefficient | | 0.1949 | |
| Cramer's V | | 0.1987 | |

| Fisher's Exact Test | |
|---|---|
| Cell (1,1) Frequency (F) | 8 |
| Left-sided Pr <= F | 0.9188 |
| Right-sided Pr >= F | 0.2772 |
| | |
| Table Probability (P) | 0.1960 |
| Two-sided Pr <= P | 0.4338 |

**Sample Size = 25**