# **Q1: Determine whether the data provided is appropriate for the test(s) available and that any analysis is achievable.**

* We note that there is random sampling used.
* We have a control group (no meditation) and meditation (treatment) group.
* Both group are independent from each other.
* The sample size is n > 10 so our Normality check is met.

|  |  |
| --- | --- |
| Chart, histogram  Description automatically generated | Chart, box and whisker chart  Description automatically generated |

**Q2. Formulate a hypothesis test**

H0: μMeditationVNRS = μControlVNRS

HA: μMeditationVNRS ≠μControlVNRS

**Q3. Analyse the data to provide the hypothesis testing conclusion.**

|  |  |  |
| --- | --- | --- |
|  | **Male Meditation VNRS** | **Male Control VNRS** |
| **x̄ (mean)** | 8.04 | 8.26 |
| **s(standard Deviation)** | 0.56 | 0.69 |
| **n (sample number)** | 23 | 23 |

**Point Estimate(PE) =** x̄1 - x̄2 = 8.04 – 8.26= -0.22

**Standard Error(SE) =** **≈** = 0.19

**Test Statistic(T) =** = = -1.16

**Degree of Freedom(*df*) =** min (*n1 -1, n2-1*) = min (*23 -1, 23-1*) = min (*22, 22*) = 22

**P value:** 2 x [Pt(q = -1.16, df = 22)] = 2 x 0.13 = 0.26

**Critical Value:** qt(p = 0.95, df = 22) = 1.71744 ≈ 1.72

**95% Confidence Interval:** PE ± (t\* x SE)

= -0.22 ± (1.72 x 0.19)

= -0.22 ± 0.33

= (-0.55, 0.11)

**4. Provide descriptive statistics (graphs and tables) of the data(VNRS).**

Initial Conclusion: Since t is in the critical region, we do not accept H0.

Final Conclusion: We accept the claim that the average of people using meditation is not the same as people using control.