Dr. Hazem analysis

1- Age normality test

![Kernel density estimate](image)

- Age distribution is not normally distributed.

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.kwallis age, by (classification)
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Kruskal-Wallis equality-of-populations rank test

| Class | Obs | Rank Sum |
|-------|-----|----------|
| 1     | 213 | 61564.00 |
| 2     | 238 | 70859.00 |
| 3     | 120 | 30883.00 |

- Chi-squared = 4.891 with 2 d.f.
- Probability = 0.0867

- Chi-squared with ties = 4.898 with 2 d.f.
- Probability = 0.0864

Using K-wallis test, there is no significant difference between ages for the 3 classifications as p = 0.086.
2- Gender (male=1) vs classification (1=simple, 2=moderate, 3= complex)

Using chi2 test, we find that p=0.69 (means that there is no significant difference between males and females according to classification.)

| Classification | male |  |  |  |  |  |  |  |
|----------------|------|---|---|---|---|---|---|---|
|                | 0    | 1 | Total | 0    | 1 | Total | 0 | 1 | Total |
| 1              | 117  | 104 | 221  | 40.77 | 34.10 | 37.33 | 100.00 | 100.00 | 100.00 |
| 2              | 105  | 140 | 245  | 36.59 | 45.90 | 41.39 | 100.00 | 100.00 | 100.00 |
| 3              | 65   | 61 | 126  | 22.65 | 20.00 | 21.28 | 100.00 | 100.00 | 100.00 |
| Total          | 287  | 305 | 592  | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Pearson chi2(2) = 5.3493 Pr = 0.069
3- (Repair=1, not repaired=0) vs classification

```
. tab classification repair, col chi2

| Key          | frequency | column percentage | repair |  | Total |
|--------------|-----------|-------------------|--------|---|-------|
|              |           |                   | 0      | 1 |       |
| 1            |           |                   |        |   |       |
|              |           |                   | 163    | 60| 223   |
|              |           |                   | 51.58  | 21.35| 37.35 |
| 2            |           |                   |        |   |       |
|              |           |                   | 115    | 132| 247   |
|              |           |                   | 36.39  | 46.98| 41.37 |
| 3            |           |                   |        |   |       |
|              |           |                   | 38     | 89 | 127   |
|              |           |                   | 12.03  | 31.67| 21.27 |
| Total        |           |                   | 316    | 281| 597   |
|              |           |                   | 100.00 | 100.00| 100.00|

Pearson chi2(2) = 67.4041   Pr = 0.000
```

Using chi2 shows p<0.001 meaning, there is significant difference in repair among classification.
### .tabulate diagnosis classification

| diagnosis        | Classification | 1 | 2 | 3 | Total |
|------------------|----------------|---|---|---|-------|
|                  |                | 1 | 2 | 3 |       |
| ASD2             | 1              | 0 | 0 | 0 | 1     |
| SUBAORTIC        | 1              | 0 | 0 | 0 | 1     |
| ALCAPA           | 0              | 0 | 1 | 1 |       |
| AR               | 0              | 1 | 0 | 1 |       |
| AS               | 2              | 3 | 0 | 5 |       |
| ASD              | 16             | 11| 1 | 28|
| ASD1             | 4              | 2 | 0 | 6  |
| ASD2             | 50             | 25| 2 | 77 |
| AVCD             | 0              | 1 | 0 | 1  |
| AVM              | 0              | 0 | 1 | 1  |
| AVSD             | 1              | 16| 4 | 21 |
| AVSD             | 0              | 1 | 0 | 1  |
| BAV              | 12             | 13| 1 | 26 |
| CCTGA            | 0              | 1 | 15| 16 |
| COA              | 0              | 25| 1 | 26 |
| CORONARY FISTULA | 1              | 0 | 0 | 1  |
| CORONARY fistula | 2              | 0 | 0 | 2  |
| CoA              | 0              | 1 | 0 | 1  |
| D TGA            | 0              | 0 | 1 | 1  |
| DBL AORTIC ARCH | 1              | 0 | 0 | 1  |
| DCM              | 0              | 0 | 1 | 1  |
| DEXTROCARDIA     | 0              | 1 | 0 | 1  |
| DILV             | 0              | 0 | 6 | 6  |
| DOLV             | 0              | 0 | 1 | 1  |
| DORV             | 0              | 0 | 20| 20 |
| DTGA             | 0              | 0 | 7 | 7  |
| EBSTIEN          | 0              | 7 | 0 | 7  |
| ES               | 0              | 0 | 7 | 7  |
| HOCM             | 5              | 3 | 1 | 9  |
| INTER atrial     | 1              | 0 | 0 | 1  |
| MARFAN           | 7              | 4 | 0 | 11 |
| MR               | 2              | 0 | 0 | 2  |
| MVP              | 13             | 5 | 1 | 19 |
| PA               | 0              | 1 | 4 | 5  |
| PA STENOSIS      | 0              | 0 | 1 | 1  |
| PAPVC            | 0              | 0 | 1 | 1  |
| PAVSD            | 0              | 0 | 1 | 1  |
| PDA              | 9              | 10| 2 | 21 |
| PFO              | 12             | 0 | 0 | 12 |
| PM               | 1              | 0 | 0 | 1  |
| PR               | 1              | 1 | 0 | 2  |
| PS               | 28             | 19| 1 | 48 |
| RVOTO            | 0              | 1 | 0 | 1  |
| SUB AS           | 0              | 11| 2 | 13 |
| SUB aortic       | 0              | 1 | 0 | 1  |
| SUPRA AS         | 0              | 0 | 1 | 1  |
| SUPRAVALVULAR AS| 0              | 1 | 0 | 1  |
| SV ASD           | 1              | 11| 4 | 16 |
| TA               | 0              | 1 | 7 | 8  |
| TAPVC            | 0              | 1 | 1 | 2  |
| TGA              | 0              | 0 | 4 | 4  |
| TOF              | 0              | 27| 16| 43 |
| TOF              | 0              | 2 | 0 | 2  |
| TRUNCUS          | 0              | 0 | 1 | 1  |
| VSD              | 49             | 35| 8 | 92 |
| mitral           | 1              | 0 | 0 | 1  |
| severe           | 0              | 1 | 0 | 1  |
| single VENT      | 0              | 0 | 2 | 2  |
| sub AS           | 0              | 1 | 0 | 1  |
| subaortic        | 0              | 3 | 0 | 3  |
| syndrome         | 1              | 0 | 0 | 1  |
| vsd              | 1              | 0 | 0 | 1  |
| Total            | 223            | 247|127|597 |