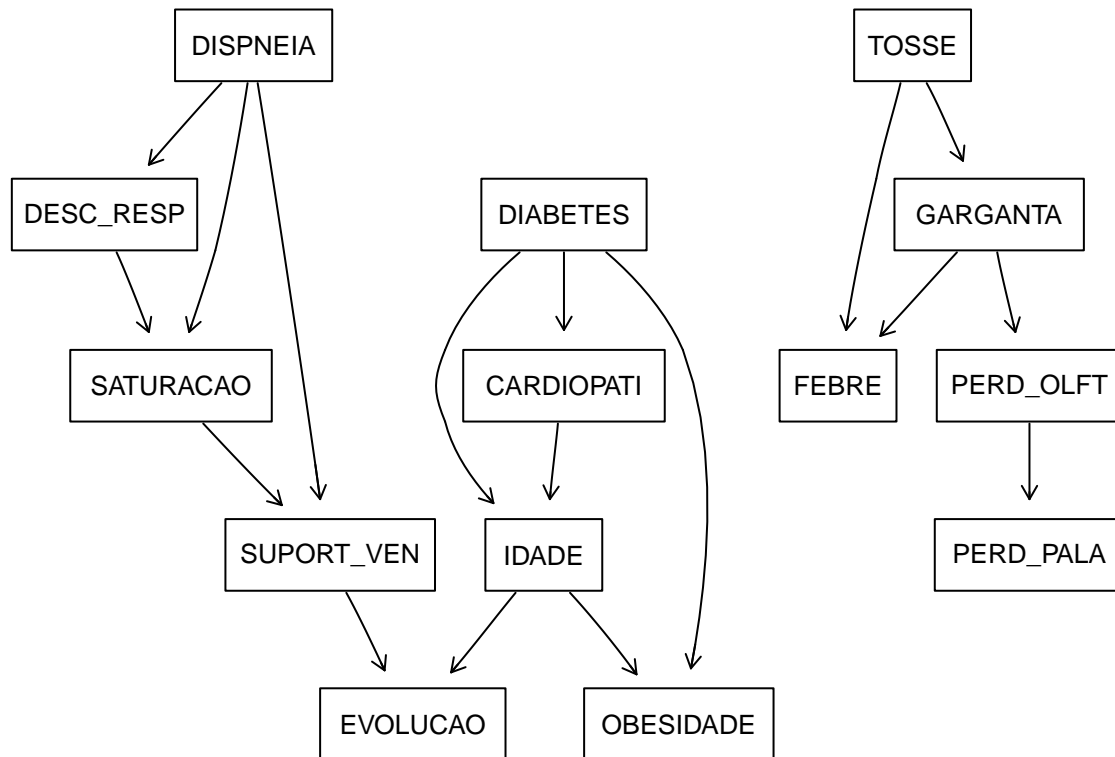# Teste Melhor Impressão de Barcharts
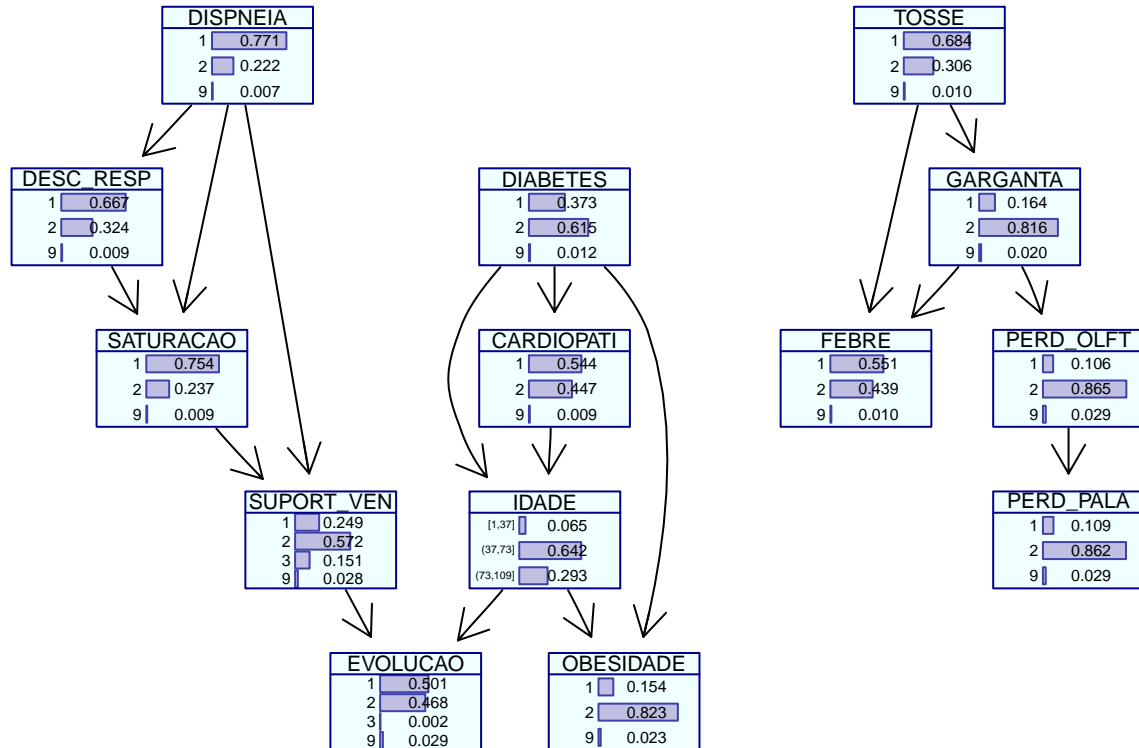
José Elvano Moraes

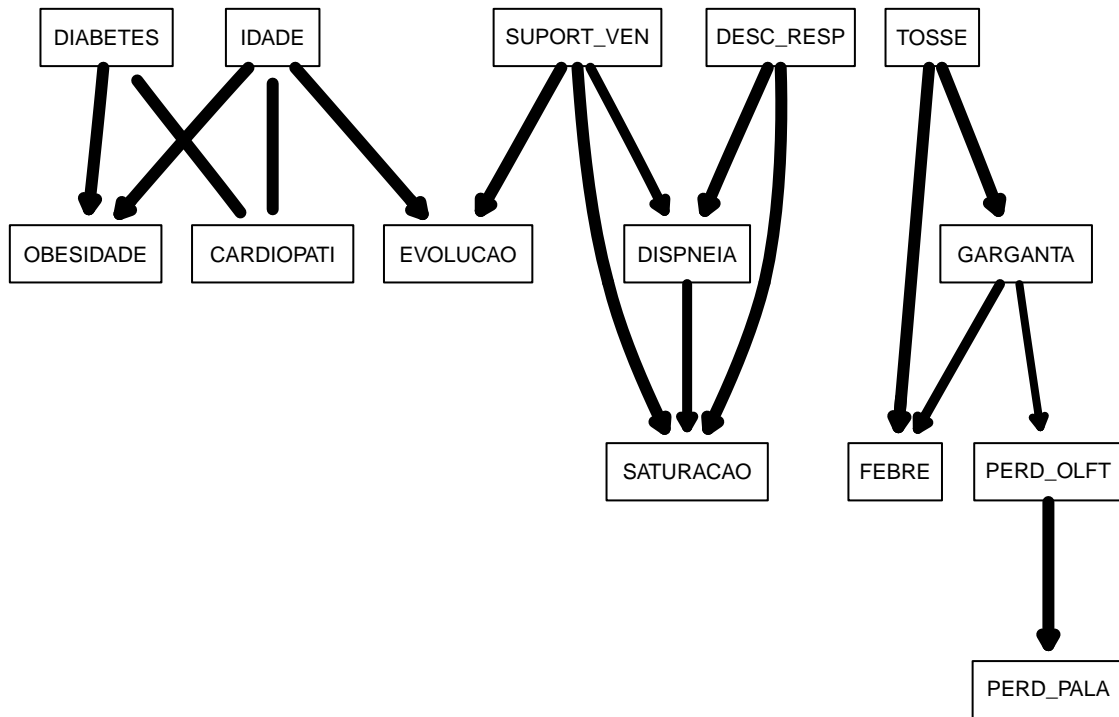4/15/2021

Amostra de 40%

Amostra de 40%


```
boots.trap <- 200
str.diff = suppressMessages(boot.strength(s1, R = boots.trap, algorithm = "mmhc"))
cat(paste('Threshold: ', attr(str.diff, "threshold")))
```

```
## Threshold:  0.48
```

```
avg.diff = averaged.network(str.diff)
strength.plot(avg.diff, str.diff, shape = "rectangle", main = "Iterações = 50, Amostra = 40%")
```
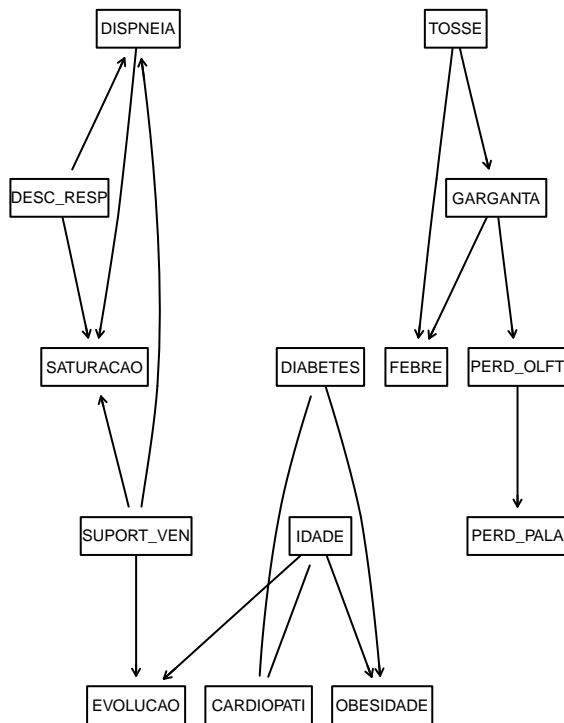
Iterações = 50, Amostra = 40%

How can we compare the averaged network (avg.diff) with the network we originally learned in from all the data (dag)? The most qualitative way is to plot the two networks side by side, with the nodes in the same positions, and highlight the arcs that appear in one network and not in the other, or that appear with different directions.
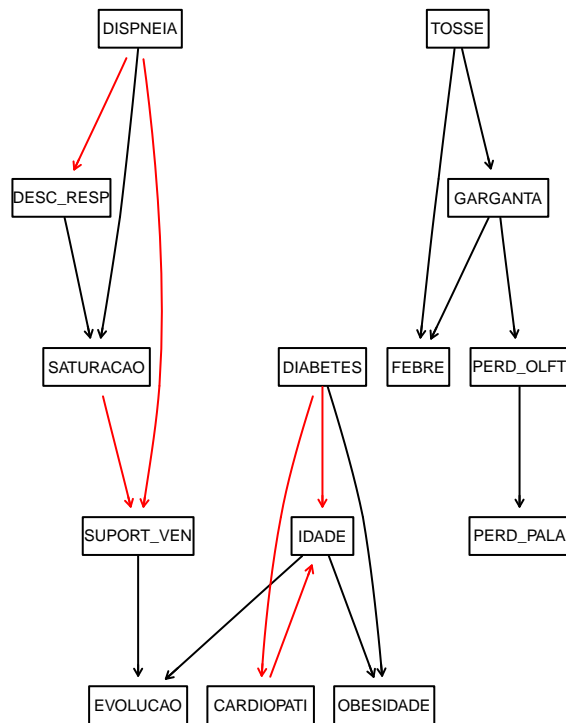
```r
par(mfrow = c(1, 2))
graphviz.compare(avg.diff, bn1, shape = "rectangle", main = c("DAG médio. Amostra = 40%", "DAG único. A
```
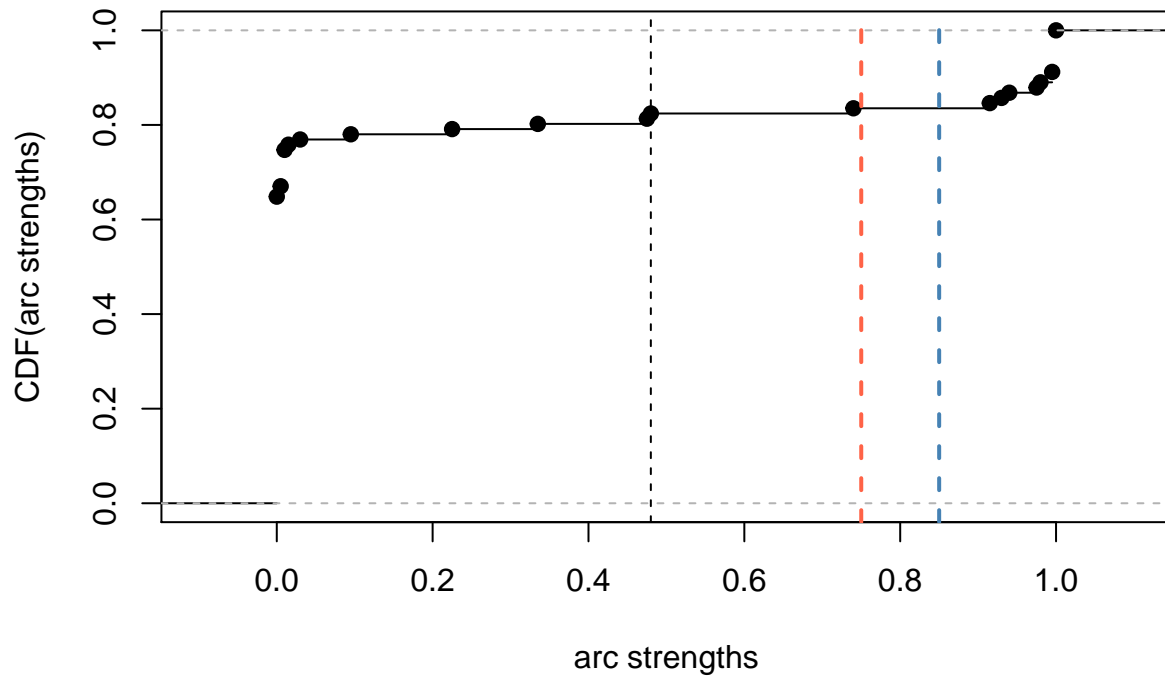
DAG médio. Amostra = 40%   DAG único. Amostra = 40%

It is also a good idea to look at the threshold with respect to the distribution of the arc strengths: the averaged network is fairly dense (17 arcs for 9 nodes) and it is difficult to read.

```
plot(str.diff)
abline(v = 0.75, col = "tomato", lty = 2, lwd = 2)
abline(v = 0.85, col = "steelblue", lty = 2, lwd = 2)
```
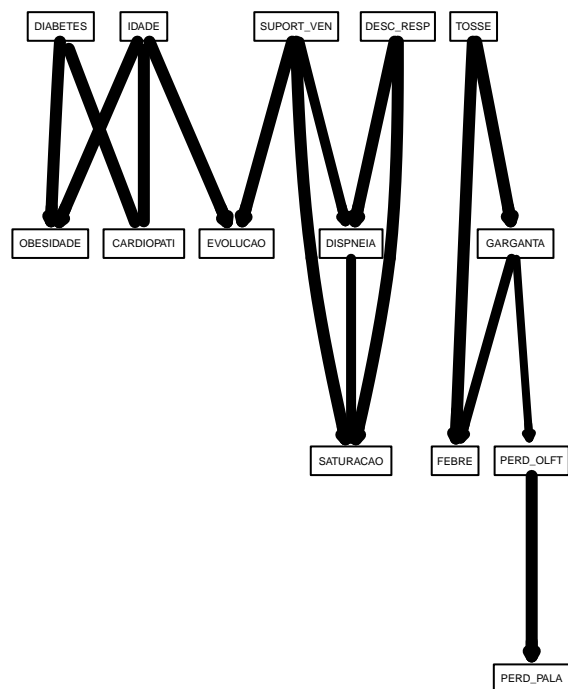
threshold = 0.48

arc strengths

The simpler network we obtain by setting threshold = 0.85 in averaged.network() is shown below; it is certainly easier to reason with from a qualitative point of view.

```
par(mfrow = c(1, 2))
avg.simpler = averaged.network(str.diff, threshold = 0.95)
strength.plot(avg.diff, str.diff, shape = "rectangle", main = "Iterações = 50. Amostra = 40%")
strength.plot(avg.simpler, str.diff, shape = "rectangle", main = 'Amostra 40%')
```

Iterações = 50. Amostra = 40%

Amostra 40%