

Hospitalization Data

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9/19/2017

In the dataset analyzed we have the variable **age**, **BMI**, and **previous ventilator incidents** plus the following indicator variables (1, 0): **sex**, **smoker**, **substance abuse**, **previous lung transplant**, **kidney or liver failure**, **heart disease**, and **HIV positive**.

Of the 132 individuals the mean of each variable is listed in the below table. Surprisingly, 50% of the observations are smokers. The subjects in this dataset appear to have a higher rate of smoking than the general public. There are slightly more “0” than “1” for sex variable (more women than men?..info was NOT provided with the dataset). The average age is nearly 59. And, the mean BMI is pushing just over 29. There are just over 1 ventilator incidents on average as well.

Sex	0.4697
Age	54.8485
BMI	29.2121
Smoker	0.5076
Substance.Abuse	0.2348
Previous.Ventilator.Incidents	1.0682
Previous.Lung.Transplant	0.2652
Kidney.or.Liver.Failure	0.1364
Heart.Disease	0.3712
HIV.Positive	0.0833

Are there any significant correlations between **sex**, **age**, **BMI**, **smoker**, and **substance abuse** and the rest of the variables? Looking at the correlation (using Spearman’s method rather than Pearson’s since we have indicator variables in the data for some of our variables).

	Sex	Age	BMI	Smoker	Substance.Abuse
Previous.Ventilator.Incidents	0.0378872	0.3997079	0.1166987	0.0684996	-0.1016031
Previous.Lung.Transplant	-0.0838863	0.0524888	-0.0807835	0.5916535	0.1125653
Kidney.or.Liver.Failure	-0.0201056	0.0020283	-0.0165442	0.3913840	0.7172386
Heart.Disease	-0.0004760	0.2910335	0.0010308	0.5999709	0.1291880
HIV.Positive	-0.1189959	-0.0183490	0.0414447	0.0776709	-0.0377190

The most alarming correlations are those of **substance abuse** with **kidney or liver failure** (0.7172) and those of **smoker** with **lung transplant** (0.5917) and **heart disease** (0.6). Surprisingly, **BMI** doesn’t appear to have any significant correlation with any of the health issues in our dataset. **BMI** does appear to have a small, positive correlation with **age** (0.1381).

I would definitely recommend that the doctors communicate the negative impacts that smoking and substance abuse have on health, specifically the impacts that they can have on lung disease, heart disease, and kidney/liver failure.