COVID-19: Bacillus Calmette-Guérin vaccine

The correlation between vaccinated and unvaccinated countries regarding deaths per million is assessed with the Kolmogorov-Smirnov test and Welch's T-test. The Odds Ratio of exposure to BCG is also assessed. The countries were divided into those providing BCG and those not providing BCG within the vaccination schedule. The deaths per million were collected per country and accumulated for the contingency table. The others group consists of the unaffected, recovered and remaining persons in both exposure groups respectively. The Kolmogorov-Smirnov non-parametric and Welch's T-test is used after assessing variances and normality of both groups. Normality cannot yet be concluded concerning incomplete data.

1. Kolmogorov-Smirnov

F-test

Ratio of variances = 0.051, p-value = 2.2e-16
95 percent confidence interval: 0.027 0.088

Shapiro-Wilk test

BCG vaccinated p-value < 2.2e-16
BCG unvaccinated p-value = 6.569e-08

Kolmogorov-Smirnov test

Alpha = 0.001, p-value = 7.53e-08
Distance statistic = 0.572

Rejection of null-hypothesis of samples drawn from the same distribution.

2. Welch Two Sample T-Test

P-value = 0.016
95 percent confidence interval: -215.8 -24.02
Means vaccinated = 18.55
Mean unvaccinated = 138.46

Rejection of null-hypothesis of no difference in mean.

3. Odds Ratio

O.R. = 0.12
99.9 percent confidence interval: 0.113 0.133

Cases of mortality had 0.12 odds of exposure to BCG than others.

	Deaths	Others
BCG+	2543	137997457
BCG-	4356	28995644

Figure 3.1: Contingency table