



Understanding Covid-19 Attributable Fraction in Nigeria

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Abstract

Covid-19 data have been abused and wrongly interpreted in Nigeria by social media and non-statisticians. The purpose of this project is to correct the trend of the current data released by the Nigeria Center for Disease Control.

Introduction and Motivation

COVID-19 is an infectious disease caused by a newly revealed coronavirus. People have been following the data release by Nigeria Center for Disease Control (NCDC), but the general problem is the wrong interpretation of the data by non-statisticians. The motivation is to present small interpretations.

Discussion

As at Thursday 3.15pm 28 May 2020, 49966 samples had been tested and 8733 were confirmed to be positive to covid-19, the number of active cases was 5978, while 2501 patients have been

successfully discharged with 254 deaths recorded. The proportion of patients who tested positive to covid-19 among the samples tested was 0.1748 (17.48%). This means that the remaining percentage of patients who tested negative to covid-19 only had travel history to the countries with this virus or have contacts with the covid-19 patients or were exposed to covid-19 patients or exhibit covid-19 symptoms (Figure 1). Nigeria has 36 States excluding the capital of Nigeria and currently Lagos State has recorded 47 deaths, followed by Kano States which has recorded 41 deaths. The average number of death per state for covid-19 is 23 deaths. Currently 8 States in Nigeria have not recorded any death due to covid-19.

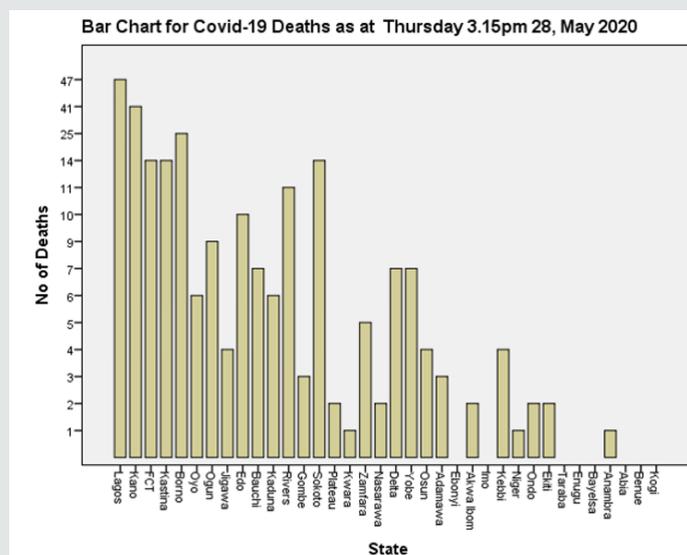


Figure 1: Bar Chart for deaths casualties for Covid-19 in Nigeria as at May 28, 2020

The 95% confidence interval was $\hat{p} \pm z_{1-\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

$$= 0.1748 \pm 1.96 \sqrt{\frac{0.1748(1-0.1748)}{49966}}$$

$$= 0.1748 \pm 0.001699$$

$$= (0.1731 \leq \hat{p} \leq 0.1765)$$

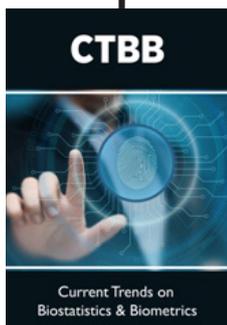
The 95% confidence interval was computed for the covid-19 attributable fraction, it means that we were 95% confident that among the samples tested, the proportion of patients who had covid-19 lies between 17.31% and 17.65%.



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