Effectiveness of Covid-19 Response: LSSU versus NMU

Michael Gills
School of Science and Medicine
Lake Superior State University

Abstract

The Corona Virus outbreak (Covid-19) has impacted the entire world. As colleges return to the fall semester, universities must try and protect their students and staff, while upholding traditional learning. This study used Lake Superior State University (LSSU) and Northern Michigan University (NMU), because they have similar implementations, and also added unique policies that could affect the results of Covid-19 prevalence. The objective of this study was to statistically analyse the period prevalences of both universities, and if proven different, make an inference on the policies implemented. The data was collected through the universities logged rates online. The period prevalence for both universities were less than %4. Statistically there was no significance between LSSU and NMU due to the overlapping 95% Binomial Confidence Intervals.

Introduction

The U.S shut down businesses, schools, and social lives to reduce both rates and routes of infection. It also affected the world population; "By early April over a third of the global population was under some form of movement restriction of COVID-19 lockdown"(Koh 2020). The hope was to "reduce the curve," according to the CDC, which included avoiding large crowds, staying six feet apart, and wearing a mask (CDC COVID-19).

Colleges tried to follow these policies while opening up in the 2020 fall semester. Both LSSU and NMU promoted safety for faculty and staff by having unique policies implemented. LSSU had a campus restriction of visitors from housing areas on campus, unless with permission of the housing department. NMU had mandatory Covid-19 testing to attend classes in person and a two week quarantine across campus. Both universities had similar policies of online learning, restriction on population in classrooms, increase of covid testing opportunities, and influx of sanitation/masks. With unique policies, the colleges may find significant reduction to their prevalence of Covid-19. This can be observed by statistically analyzing there results from the fall 2020 semester.

Objective Statement

The study will see if there is a statistical significance between LSSU and NMU period prevalence of Covid-19 for the fall 2020 semester.

Methods

- The data was collected through the universities individual fall 2020 semester homepages
- Using Google Excel, the Period Prevalence was run through a 95% Binomial Confidence Interval

Table 1. Data collected from LSSU and NMU homepages

Universities	LSSU	NMU
Covid Cases	64	282
Total Population	2199	7542
% Cases	2.91	3.74

Results

- Using a 95% Binomial Confidence interval, no Significant difference was found from the period prevalenced between LSSU and NMU (as seen in Figure 1).
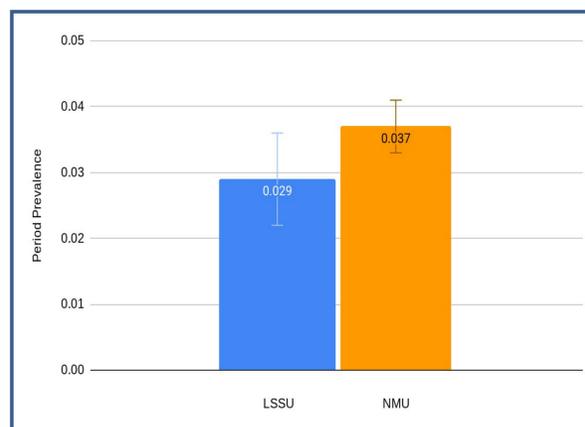- LSSU had 2.9% and NMU had 3.7% students/faculty test positive for Covid-19 (as seen in Table 1).

Figure 1. Period Prevalence of Covid-19 for fall 2020 semester at LSSU and NMU, with bars showing the 95% Confidence intervals

Acknowledgements

Discussion

Although there was no statistically significant difference between the period prevalences of LSSU and NMU Fall 2020 semester Covid-19 Cases, both colleges had a very small rate (LSSU 2.9% & NMU 3.7%). This is significant because they were able to keep the rates low with an extremely contagious virus. To possibly improve both colleges further, each could adapt the others unique policies. For example, LSSU could do mandatory testing and NMU could restrict visitors from on campus housing.

- To improve this study Further
  - Collecting more data into the spring 2021 semester
  - Testing more data in Colleges
  - Looking into the common cold rates
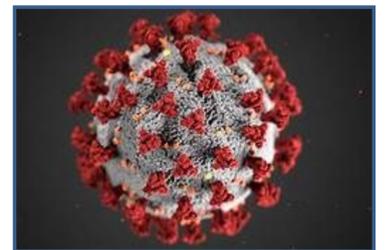
References

CCDC. Coronavirus Disease 2019. Retrieved on Feb 16, 2021, from <www.cdc.gov/coronavirus/2019-ncov/index>

CDC. Past Pandemics. 1918 Pandemics (H1N1 Virus). Retrieved on Feb 19, 2021, from <www.cdc.gov/flu/symptoms/flu-vs-covid19>

Koh D. 2020. *COVID-19 lockdowns throughout the world*. Occupational Medicine. 70(5), 322

LSSU. Coronavirus. Retrieved on Feb 22, 2021, from <www.Lssu.edu/coronavirus>

NMU. Safe on campus. Retrieved on Feb 22, 2021, from <www.nmu.edu/safe-on-campus/dashboard>