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# COVID CASES COMPARISON OF DIFFERENT AMERICAN STATES

**Muhammad K. Javed[1], Muhammad I. Qadir[2], Anam Javaid[3] and Dr. Sumbal Javaid[4]**
[1-2]Institute of Molecular Biology and Biotechnology, Baha Uddin Zakariya University, Multan, Pakistan
[3]Women University Multan, Pakistan
[4]Nishtar Medical University and Hospital, Multan, Pakistan

**Abstract:** The goal of this research is to check the Average of COVID-19 cases in different states of USA (United States of America) and to check the variation of COVID-19 cases in different USA states. To check the variation or average of COVID-19 reported cases and deaths in different states of USA, we took data from the world o meter and compare the covid-19 cases from March to May in USA states. Descriptive Analysis is used to conduct this research. The purpose of the study is to observe the total number of cases in our state. Death ratio in the state with the total number of active cases in the state. the purpose is the identification of the first case, when it deducted with the first death of the person due to COVID-19. There is total of 9.2 milion population in the the state of New Jersey. In which for the month of March, total of 18,696 people were effected from COVID-19. So a total of 0.002% ( 18696/9200000) were effected from the COVID-19. The total of (267/9200000) = 0.0000290% of the total population death occur. In the March 2020, COVID-19 also attacked on the other states of US. *e.g.* In the state of New York, there were total of 83,712 cases were reported and 1941 number of deaths occur in the state of New York. In Illinois, 4$^{th}$ case were confirmed in March 2, 2020. In the end of March 2020, there were total of 5994 cases were reported. The number of deaths were 99 in that state. Its means that among the total population of 13.1 million, total of 0.00045% population were effected from this disease. While 0.0000076% population died with this pandemic. Similarly the total of confirmed cases with the deaths were observed. For the other states, total number of confirmed cases with the number of deaths were observed as in California, there were total of 8155 cases were reported in the end of March. There were 171 deaths occur. Similarly in the state of Massachusettes, there were 6,620 cases were appear in the end of March 2020. The total number of deaths were 89 until the end of March 2020. The comparisons with the other states were observed with the state of New jersey and the conclusion is made as that in some states, the cases were more than the New Jersey and in some states, the cases were less than the New Jersey. Similarly for the number of deaths, same thing happens. Over all in the US, the number of cases for the COVID-19 increased exponentially. The ratio for the number of death also increased from this pandemic.

**Keyword:** Virus, Corona, Threat, Disease

## Introduction

The world did not forget the year 2020 just because of a virus known as corona virus disease 2019 or abbreviated as COVID-19 [1]. This virus shutdown everything even the entire world almost [2]. This virus attacks around 4.3 million folks around the globe and still increase cases exponentially [3]. This virus arose from Wuhan, China. There are lots of negative effects of this virus. All the business shutdown just because of

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Corona and it seems that 2020 is wasted due to COVID-19 [4]. The economy of the world is badly destroyed just because of Corona. This virus shows that we need to focus more on our scientists and provide them all the facilities to conduct research on different major topics [5]. This virus aware people about some of the major fields like virology, microbiology, and biotechnology and now people said that the biotechnology is the future of the world. With lots of negative effects of COVID-19, there are also some positive affects like on environment, climate, and some major fields like biotechnology [6]. We can see that ozone layer start filling faster than ever in 2020 and can see the heavy decline in different types of pollution like air pollution, noise pollution etc. The most affected countries due to COVID-19 includes USA (United States of America), Italy, Spain, Germany, and china. In this research we compare the cases of corona from different states of USA [7].

**Objective**

- To check the Average of COVID-19 cases in different states of USA
- To check the variation of COVID-19 cases in different states of USA

## METHODOLOGY

### Data Collection

To check the variation or average of COVID-19 reported cases and deaths in different states of USA, we took data from the world o meter and compare the covid-19 cases from March to May in USA states.

### Statistical Analysis

Descriptive Analysis is used to conduct this research

## RESULT AND DISCUSSION

The outcome of this research is listed in the following section:

### Descriptive Statistics and Diagrams

**a)**The number of cases in US are observed . The cases can be observed through *Figure 1*.

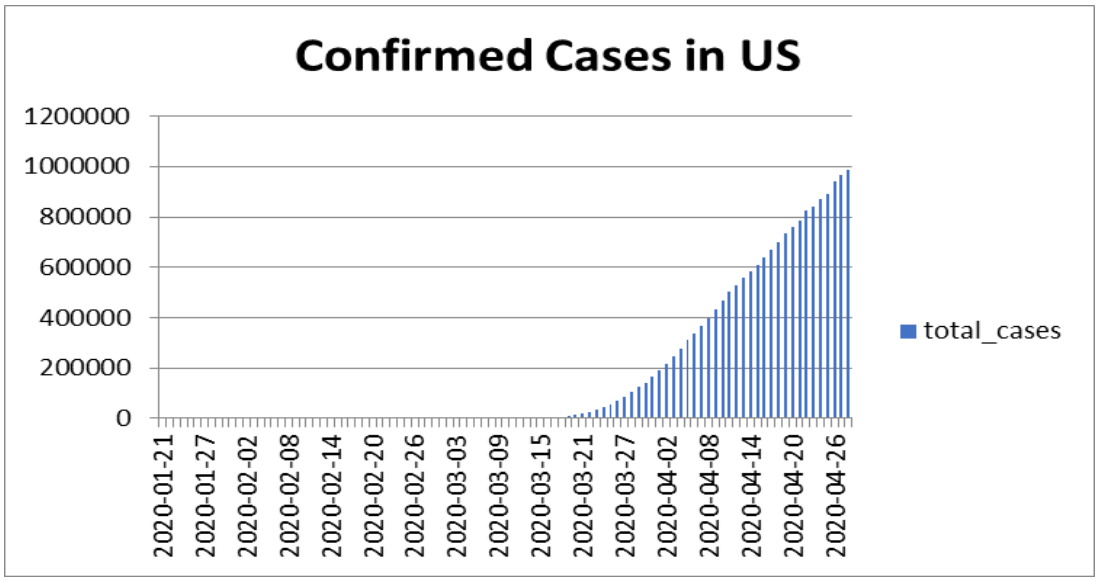


*Figure 1:* confirmed cases in US from January 2020 to April 2020

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From *Figure 1*, the confirmed cases of COVID-19 are observed. From the *Figure 1*, it is clearly observed that from January 2020 untill April 2020, total confirmed cases in US are increased.
The confirmed cases for the month of March is observed for the state New Jersey. The total cases are observed in *Figure 2*.

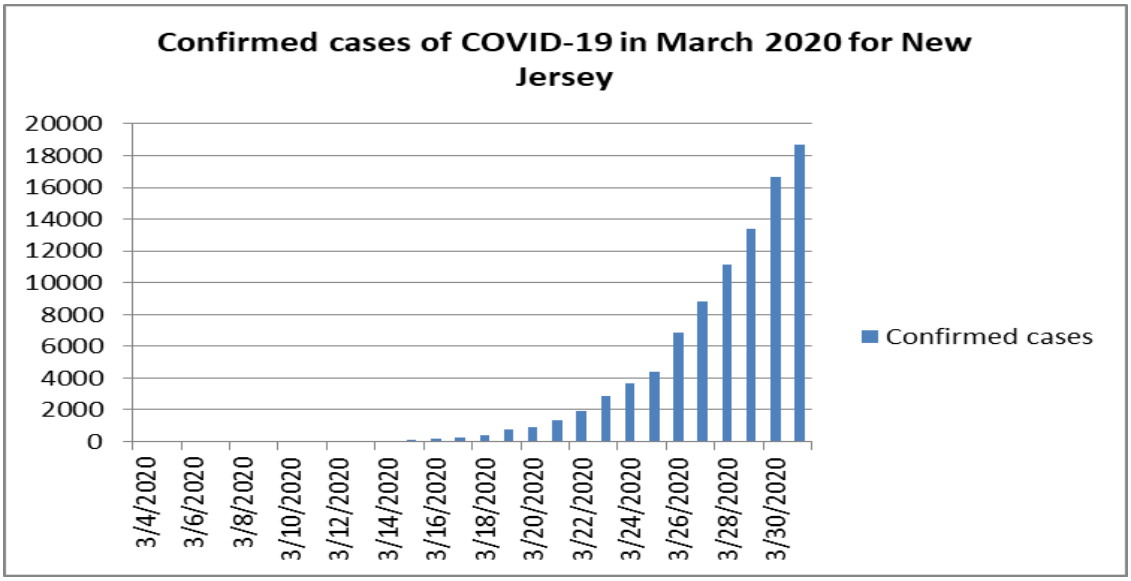


*Figure 2:* confirmed cases in New Jersey for March 2020

From *Figure 2*, it is observed that the total number of effected cases are increased exponentialy in the New Jersey for the month of March 2020. From 4$^{th}$ March, there was one case while untill 31$^{st}$ March, there were 18696 cases were reported from the pendemic of COVID-19.

**b)**Similarly, for the number of deaths, the cases were observed in the US from January 2020 to April 2020. The Figure 3 is obtained for the purpose of observing number of deaths in US.

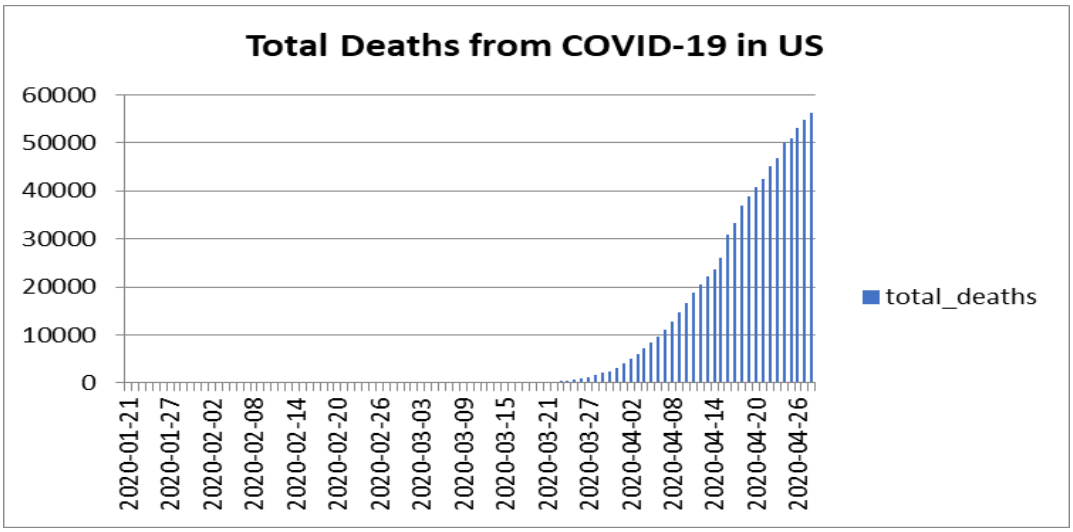


*Figure 3:* Total deaths in US from January 2020 to April 2020

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*Figure 3* state the total deaths in US from the start of January untill the end of April. It can be clearly observed that the ratio of death is increased in the US from COVID-19. There are now 56245 number of deaths untill the end of April. Specifically in our state, total number of deaths are observed only in the month of March from this pendemic. *Figure 4* is obtained for this purpose.

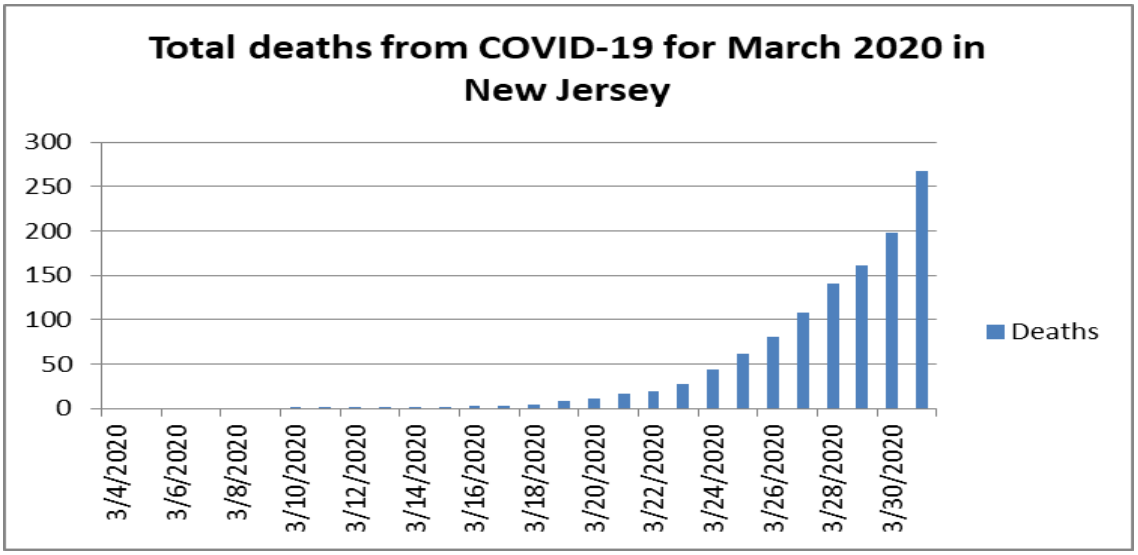


*Figure 4:* Total deaths in New Jersey for March 2020

From *Figure 4*, the total death ratio can be observed. The deaths are rapidly increasing in the month of March 2020. The discriptive statistics is observed for the all four cases. The mean and standard deviations are observed to see the variation in the cases and the deaths.
The details are observed in**Table 1.**

| | **mean** | **S.D** |
|---|---|---|
| Cases in US | 177466.5 | 294211.7 |
| Deaths in US | 8111.354 | 15597.69 |
| Cases in New Jersey for March | 3304.321 | 5432.102 |
| Deaths in New Jersey in March | 52.86364 | 75.64975 |

**c)** from the *Figure 1-Figure 4*, it is observed that how much faster the cases are increased for the pendemic and for deaths in US and in our state. From **Table 1**, the variation can be observed for each situation. The variation in the overall US is more than the variation in our state. ots means that the overall variation in deaths and cases are more as compared to just our state. On the average, also the mean is greater for US as comapred to our state only.

**d)** the advantages of presenting the data in charts is that only by seeing just one time, the pattern can be observed that whether there is an increase or decrease in that situation. On the other hand, disadvantage is that the whole exact figure cannot be observed or we cannot obseve that what happened exactly in the middle of that period.

**3) a)** For the probability count, the number of cases and the deaths are observed only in the month of March 2020. The exact digits can be observed in **Table 2.**

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**Table 2.** Number of cases and deaths in March 2020 for some states of US

| States | Number of cases | Number of deaths |
|---|---|---|
| New Jersey | 18696 | 267 |
| Illinois | 5994 | 99 |
| California | 8155 | 171 |
| Massachusetts | 6620 | 89 |
| Texas | 3266 | 41 |
| Florida | 6741 | 85 |
| **Total** | **49472** | **752** |

On the basis of **Table 2**, it is observed that the number if cases in our state is more than other states in March.The probability of the number of cases is increasing in our state as compared to the other states. Similarly, the number of deaths are increasing in our state as compared to the other states. The frequency of March shows that the cases are increasing day by day. Also the number of deaths are increasing on daily basis in March.

**4.** The descriptive statistics for the New Jersey in the month of March 2020 is found. The number of confimed cases with the total number of deaths were observed. The summary statistics for that can be defined in Table 3.

**Table 3: Summary Statistics of New Jersey in March 2020**

| Descriptive | Total Cases | Total Deaths |
|---|---|---|
| Mean | 3304.321 | 52.86364 |
| Standard Error | 1026.571 | 16.12858 |
| Median | 347 | 13.5 |
| Mode | 4 | 1 |
| Standard Deviation | 5432.102 | 75.64975 |
| Sample Variance | 29507729 | 5722.885 |
| Kurtosis | 2.194049 | 1.979609 |
| Skewness | 1.788444 | 1.639772 |
| Range | 18695 | 266 |
| Minimum | 1 | 1 |
| Maximum | 18696 | 267 |

For the rest of the state that has been used in comparison, discriptive analysis is carried out from **Table 4 - Table 7.**

**Table 4: Summary Statistics of Illinois in March 2020**

| Descriptive | Total Cases | Total Deaths |
|---|---|---|
| Mean | 1250.392857 | 29.71428571 |
| Median | 436.5 | 17.5 |
| Mode | 1049 | #N/A |
| Standard Deviation | 1714.965507 | 30.32497973 |
| Minimum | 4 | 1 |
| Maximum | 5994 | 99 |

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**Table 5: Summary Statistics of Massachusetts in March 2020**

| Descriptive | Total Cases | Total Deaths |
|---|---|---|
| Mean | 1192.931 | 28.33333333 |
| Median | 218 | 20 |
| Mode | 2 | #N/A |
| Standard Deviation | 1912.309 | 26.91850777 |
| Minimum | 2 | 1 |
| Maximum | 6620 | 89 |

**Table 6: Summary Statistics of Texas in March 2020**

| Descriptive | Total Cases | Total Deaths |
|---|---|---|
| Mean | 654.3077 | 15.53333 |
| Median | 95 | 11 |
| Mode | 5 | 5 |
| Standard Deviation | 1004.135 | 13.78854 |
| Minimum | 5 | 1 |
| Maximum | 3266 | 41 |

**Table 7: Summary Statistics of Flourida in March 2020**

| Descriptive | Total Cases | Total Deaths |
|---|---|---|
| Mean | 1233.552 | 20.58333 |
| Median | 216 | 10 |
| Mode | 2 | 2 |
| Standard Deviation | 1898.746 | 24.45745 |
| Minimum | 2 | 2 |
| Maximum | 6741 | 85 |

**a)** From Table 3-7, the descriptive analysis shows that the highest mean number of cases are observed for New Jersy. While the lowest mean number of cases are observed for Texas. The highest mean number of death is observed for New Jersy and the lowest mean number of death was observed for Texas.

**b)** standard deviation tell us that how much variation is observed on the average. The more standard deviation means the more variation on daily number of cases. The less standard deviation mean that the less variation in number of cases or the number of deaths. *e.g.* The highest standard deviation was observed for New Jersy for the number of cases observed. The lowest standard deviation was observed for Texas. The highest standard deviation was observed for New jersy and the lowest is observed for Texas in case of number of deaths.

**Conclusion**

The purpose of the study is to observe the total number of cases in our state. Death ratio in the state with the total number of active cases in the state. the purpose is the identification of the first case, when it deducted with the first death of the person due to COVID-19. There is total of 9.2 milion population in the the state of New Jersey. In which for the month of March, total of 18,696 people were effected from COVID-19. So a total of 0.002% ( 18696/9200000) were effected from the COVID-19. The total of (267/9200000) = 0.0000290% of the total population death occur. In the March 2020, COVID-19 also attacked on the other states of US. *e.g.* In the state of New york, there were total of 83,712 cases were reported and 1941 number

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