

Letter to the Editor

Understanding the impact of COVID-19 pandemic on economy and health care – The dip in Sensex in tandem with the dwindled patient attendance in hospital

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Dear Sir,

The last day of the year 2019 heralded the emergence of a novel viral infection. On this day, China brought to notice to the World Health Organization that some cases of pneumonia in the country were of unknown etiology.^[1] Later, the causative organism was found and named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The cases which were first localized to the Wuhan city of China spread to other cities in China and other nations. This novel coronavirus has spread to 202 countries throughout the globe.^[2] The virus whose incubation period is 5.2 days (4.1–7.0) is very contagious and has high case fatality rate compared to other viruses affecting the respiratory tract of human beings.^[3] The World Health Organization (WHO) declared the disease caused by this virus as the “Public Health Emergency of International Concern,” reversing two previous decisions on January 30, 2020. The disease which was first named as 2019 novel coronavirus (2019-nCoV) has been renamed as coronavirus disease of 2019 (COVID-19) by the WHO on February 11, 2020.^[4] The WHO also issued a warning that “all countries should be prepared for containment, including active surveillance, early detection, isolation and case management, contact tracing and prevention of onward spread of the virus.”^[5] The Director-General of the WHO in a media briefing on March 11, 2020, declared COVID-19 as pandemic. Till then, there were more than 118,000 cases in 114 countries, and 4291 people had lost their lives.^[6] Globally, by middle of April 2020, there have been 1,699,595 confirmed cases of COVID-19, including 106,138 deaths, reported to the WHO.^[7]

Advent in India

In India, the first case of COVID-19 was detected on January 30, 2019. Since then, the infection spreads to most of the states in the country and the number of cases continued to steadily increase. As on April 13, 2020, there were 7987 active cases and 308 deaths reported to the Ministry of Health and Family Welfare, Government of India, by different states.^[8] Most of these cases are either traveler from other countries or are linked to people with a travel history to affected countries. COVID-19 manifests as dry cough, frequent fevers, and in severe cases pneumonia.^[9] Older patients and patients with underlying comorbidities are at a higher risk of death.^[10]

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COVID-19, economy, and health-seeking behavior

The pandemic has inflicted a huge blow to the economy and health care of all affected nations. The paper tries to show the impact of the COVID-19 disease on the economy of India as gauged by the stock market and the outpatient department (OPD) attendance of a teaching hospital of the state of West Bengal. The purpose of the present study is to see whether the panic of the disease as determined by low patient attendance has any relationship with the economy of the nation taking BSE indices as surrogate marker of Indian economy.

Mass immobilization

At the behest of the Central Government of India, a single-day voluntary public curfew was self-implemented by the citizens of the country on March 22, 2020. During the same period, similar measures were taken at state and regional levels by the respective administration. Schools were closed and mass gatherings were prohibited. A nationwide lockdown of 3 weeks was imposed by the Union Government of India from March 24, 2020, with the objective of containing the spread of the virus. This lockdown restricted the movement of the entire population of the country. All modes of transport were stopped throughout the country and all non-essential services were closed. Citizens were instructed to remain indoors, maintain social distancing with fellow citizens during unavoidable interaction, and use protective naso-oral masks to prevent viral transmission.

Macroeconomics

Sensex which is the benchmark index of the Bombay Stock Exchange (BSE) is a very sensitive and prompt indicator of macroeconomics. In simple words, it is the real-time cumulative wealth of the 30 enlisted blue chip companies. Despite being vulnerable to rapid fluctuations due to unpredictable human behavior during any crisis, Sensex is a surrogate for industrial growth and economic stability. It has been seen that acute changes in Sensex reflect the effect of ongoing global or local phenomenon.

A Medical College and Hospital in India

College of Medicine and JNM Hospital (COMJNMH) is the tertiary care teaching hospital located in the Kalyani subdivision of the district Nadia of the state West Bengal. It runs undergraduate and postgraduate medical courses in modern medicine since 2010. Being a state-run hospital, it has a very busy and crowded OPD and bed occupancy is almost cent percent. Patient not only comes from Kalyani but also many individuals from neighboring towns and villages seek medical care from the hospital. Majority

of the patients avail the public transport to come to the hospital.

Correlation between sensex and patient attendance

For the study, we took the following data of BSE Sensex of all working days of the month of March 2020: Daily open, high, low, and close value. We took the daily attendance of the following OPDs of the COMJNMH separately for males and females for all days of March 2020 when OPDs were open: General Medicine, General Surgery, Chest, EYE, ENT, Dental, Orthopedics, Pediatrics, OBG, Psychiatry, and Dermatology. The data were entered into MS Excel and analysis and graphs were made in the Excel only.

For analysis, we took the data of 20 days in the month of March 2020 when both BSE and OPD of COMJNMH were open simultaneously. In the month of March 2020, on 25 days, OPD of COMJNMH was open for patients. On March 2, the cumulative attendance of the selected OPD of the COMJNMH was 2778, it fell to 301 on March 31, a massive fall of 89.3% [Figure 1]. The biggest fall in the attendance was in dermatology outdoor, followed by orthopedics, pediatrics, psychiatry, and eye [Figure 2]. On March 2, 2020, the BSE Sensex opened at 38,911. On March 31, 2020, it closed at 29,468, a fall of 24.3% [Figure 3]. On March 23, it closed at 25,981 points, a fall of 34% from the opening day mark of March 2, 2020. In the month of March 2020, there were 21 days on which BSE stock exchange was open. The Pearson's correlation coefficient between the OPD attendance and BSE index values is 0.67 for the month of March 2020 indicating statistically significant correlation between the OPD attendance and the market capitalization of major companies of India.

Economic impact and health care

The COVID-19 pandemic has shaken the world. The transportation has been stopped to enhance lockdown. People can go out for emergency purpose only. This has affected the Indian economy in a big way. Since emergence of the pandemic of COVID-19, there has been huge fall in the economy of all affected nations. More than 2 lakhs companies have become bankrupt in China itself due to the pandemic. The World Bank has forecasted that the GDP growth in the financial year 2021 is expected to range from 1.5 to 2.8% for India. The functioning of hospitals has become haywire. The state governments have converted many hospitals to the COVID hospitals dedicated to the patients suffering from COVID. The governments are also discouraging the people to visit OPDs for minor ailments. People have also become aware of the chance of catching infection while visiting a crowded OPD of a government hospital. Moreover, the unavailability of public transport

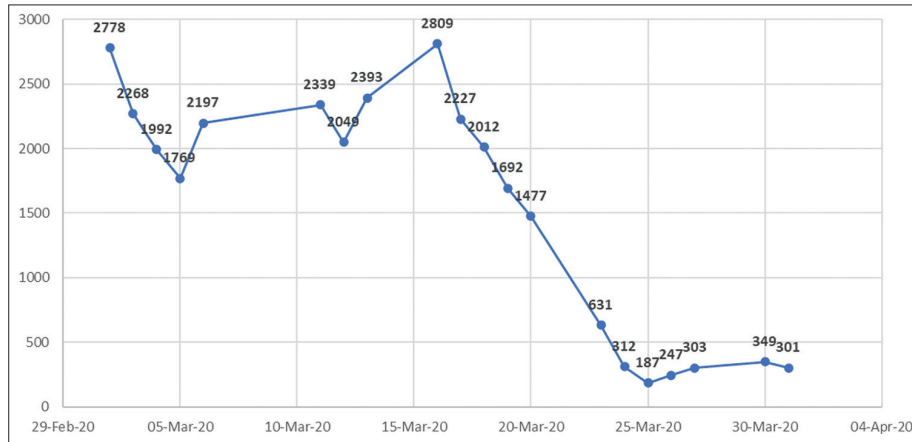


Figure 1: Daily cumulative attendance of selected outpatient departments of College of Medicine and JNM Hospital for the month of March 2020.

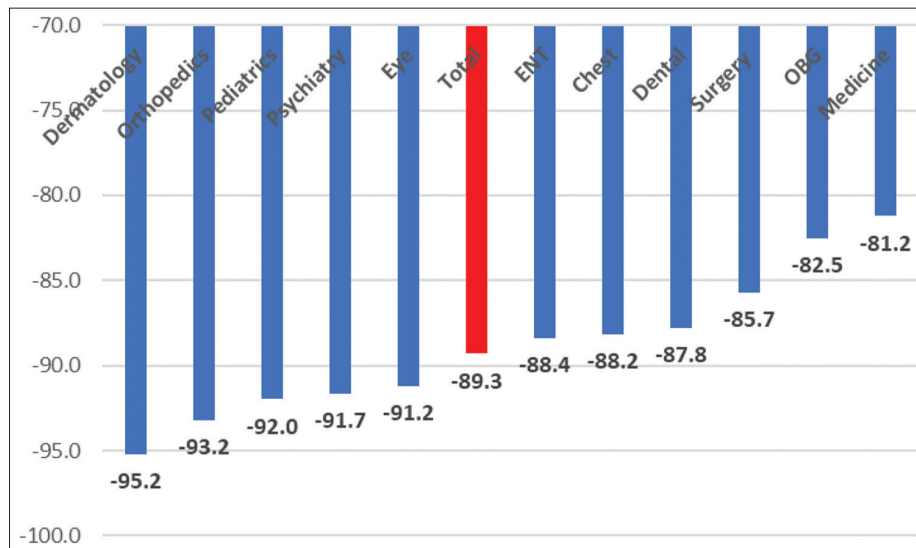


Figure 2: Fall in the outpatient department attendance of selected departments for the month of March 2020 of College of Medicine and JNM Hospital.

prevents the patients to attend OPDs. The SARS-CoV-2, COVID-19, and the nationwide lockdown have put a massive stress on the economy of India and OPD attendance of the hospitals. The union government along with state governments must come with economy booster package for the distressed industries and take some concrete steps to win back the confidence of common people to overcome this huge humanitarian crisis.

Limitations of the study

The study was conducted for a very short period to introspect the effect of COVID-19 incursion into India on its economy and health care. In a rapidly adapting world in the COVID era, the repercussions of the pandemic are completely unpredictable and need to be continuously

monitored. However, by the time, this article will be in print, as per statistical projections, the number of cases would have increased multifold, while Sensex with proactive administrative interventions (in the form of stimulus packages) will tend to regain its lost points.

CONCLUSION

The COVID-19 pandemic has exposed the lacunae of our system in dealing with a crisis of such a massive scale. The rebels of the pandemic have penetrated all spheres of life, and Sensex and health-seeking behavior were no exceptions. Amidst the crisis, we hope that the collective strength of the united human effort will soon surmount the ravaging pandemic and the world will bounce back to normalcy.

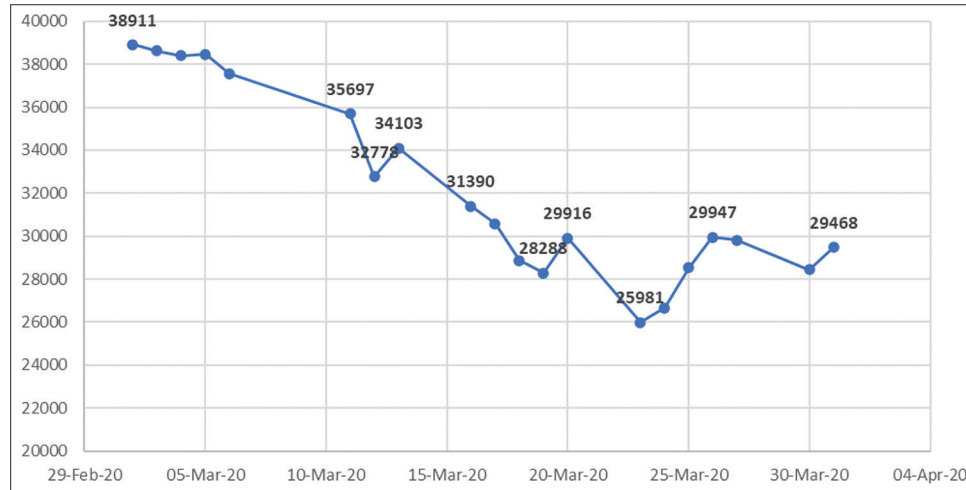


Figure 3: Movement of Bombay Stock Exchange index value on trading days in the month of March 2020.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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