ORIGINAL RESEARCH PAPER

Biological Science

A SURVEY OF COVID-19: THE PATTERN OF CORONA PANDEMIC IN UJJAIN DISTRICT (M.P.) INDIA, BEFORE AND AFTER DEEPAWALI FESTIVAL

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ABSTRACT

The outbreak of novel corona virus infection which originated from Wuhan city of China, it leads to spread in more than 150 countries all over the world. This pandemic travelled rapidly from China to other places. In India this disease affected to larger population and caused many deaths during earlier periods of infection, but later on as studies about the corona virus progressed, death rate was lowered. Our study is based on the effect of Deepawali festival in India when people were expected to be slightly relaxed due to decrease in mortality rate and active cases. Our survey is a warning to all people of India as well as world that they should not take corona disease lightly and must follow all precautions even after the vaccination specially co morbid and old aged people.

INTRODUCTION

Mankind has witnessed several major pandemics causing millions of deaths, the Black Death being the worst. The Black Death also known as Bubonic plague has taken at least 50 million lives across the Europe, Africa and Asia lasting the whole 14th Century (W.H.O.2014) as reported by Klokol D. et. al 2020. In 1917-1918 another epidemic emerged, this time originating from birds and quickly transmitted to pigs and humans, commonly known as the Spanish flu and caused by H1N1 *influenza virus* (Taubenberger JK and Morena DM, 2006).

In 2019 similar pandemic originated from Wuhan China called COVID-19. From its origin, COVID-19 is now a pandemic affecting more than 150 countries globally causing large numbers of deaths and other complications. As on 21st May 2020 (9:32:42 am) COVID-19 affected cases were 5,011,467 and 328,368 deaths globally (TMC library2020).

In order to prevent the disease and it's spread in India, Indian Government had announced a trial Janata curfew on 22nd March 2020 for one day, in which people themselves were remain locked at home without any compulsory action by the government. Later on, a complete lockdown for 21 days was announced from 26 March 2020. In India, COVID patients increased gradually therefore the lockdown was extended for a period of 15 days twice. From 1st of June 2020, gradually unlock process started depending upon the COVID conditions with very strict guidelines except in some restricted zones where COVID patients were higher in number.

Corona virus is a large family of viruses which may cause illness in humans. In humans, several corona viruses are known to cause respiratory infections ranging from common cold to more severe diseases like Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome(SARS)(Deosky ASS, 2020).. Signs and symptoms of COVID-19 infection typically occur within 2-14 days after a person comes in contact with the virus. According to WHO, typical signs of infections include fever, cough, muscle pain, tiredness and shortness of breath. In more severe cases, it can lead to Pneumonia, multiple organ failure and even death. Most infected persons show symptoms within 5-6 days after contraction of virus. However the infected person can be asymptomatic. Generally older people and comorbids are expected to be at higher risk of developing severe symptoms (Mukhtar Y,2020).

Present study is a survey of pattern of COVID-19 in a district of Madhya Pradesh in India. The survey includes, pattern of COVID with special reference to age and gender before and after Deepawali festival. Deepawali is the main festival in India and important for business purposes because people purchase variety of household supplies, decorative items, apparels, furniture, automobiles etc which boosts the businesses. The markets are overcrowded with enthusiastic people. So, chances of COVID were supposed to be highest as it spreads via personal contact or object handling.

MATERIAL AND METHODS:

Data sources for analysis were taken from the COVID-19 patient list declared by the Chief Medical Officer(CMO), Ujjain district, Madhya Pradesh, India on daily basis. We have chosen data from 31st of October 2020 to 3rd of December 2020 i.e. before and after the Deepawali festival. Number of active cases with their age and gender was tabulated 15 days prior to Deepawali and 15 days after the Deepawali. Authors have analyzed these data and represented them as graphs. Highlights of our data are as following:-

- Day wise number of active cases.
- Segregation of sexes i.e. male or females.
- Average age of infected persons.
- Calculation of Standard Deviation and standard Error.

RESULTS AND DISCUSSION:

From Data Analysis authors have observed that prior to the Deepawali festival total number of infected persons were less in number 15 days prior to the Deepawali festival. As shown in graph 1,2,3 and 4 it is clear that the total number of affected persons were 07 on 31st of October 2020; 07 on 1st November 2020; 04 on 2nd November; 11 on 3rd November and so on. Just a day before the start of festival on 11 November maximum numbers of 18 active cases were reported. The main day of Deepawali was 14 November, after that the numbers of active cases were reported higher. On 17th November there were 27 positive cases, on 18th 27 positive persons, on 19th 22 affected persons, on 20th 21 cases, 0n 21st 17 cases and 0n 22 November 39 positive cases were reported. After the festival, on an average 25-30 positive cases were reported daily for 15 days while before the festival average (which was the duration of our study). As far as gender is concerned, it was observed that males were more affected as compared to females throughout the study. The average age of affected males and females was approximately 40-50 years. However, the age of affected person was as high as 96 years and as low as 03 years. The average of age of males was 45.78±2.1429 and average age of females was 48.48±3.615 before Deepawali and 46.51±5.8722 and 43±8.96280 after the Deepawali respectively.

India is a festival loving country where so many festivals are celebrated on mass scale with traditions and joy. Deepawali is the biggest festival and is celebrated for five days, this year it started from 13 November 2020 and ended on 17 of November 2020. The festival has its own history of Ramayana, a story of Lord Shri Rama. It is celebrated on returning of Lord Rama after his victory over the King Ravana. The celebration also represents the victory of truth and goodness over Devils powers. People purchase new apparels, furniture, households etc. They worship and show their regards with fire cracking. People of India clean up their houses and decorate with lights. They meet their relatives and friends with lots of sweets and other gifts.

As our observations showed that prior to the festival active cases were lesser in number which may be due to people taking care of themselves from corona virus and following the preventive measures. But before the festival they were moving a lot in congregated areas for marketing so the number was approximately doubled after the festival. During the purchasing they might have come in contact with infected person who may be asymptomatic; however, as the symptoms of disease may develop after 2 to 14 days, so there were more positive cases after the Deepawali. People might have not followed the strict guide lines of preventive measures.

As far as gender of affected persons is concerned, males were affected more than the females, the number of males were more than twice or thrice on some days, in both prior or after the festival. It may be due to the fact that during the festival the males migrated more outside their homes in comparison to females, since females have to prepare lots of traditional sweets and snacks at home. Not only during festival season, in general also same pattern is observed in India.

There was not much difference in ages of males and females in any data, which may be due to people were aware of the fact that the age above 55-60 years and below 10 years were at high risk of corona virus, as medical bulletin was regularly alarming through Television, social media and sources. They took care of older people and children by locking them at home.
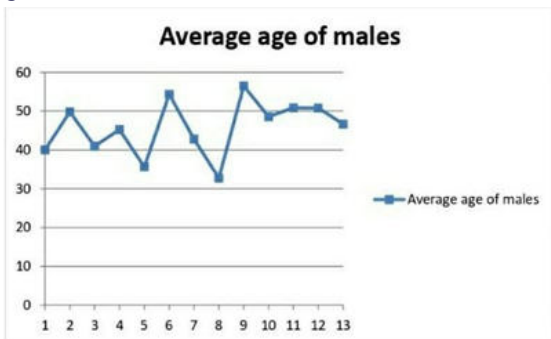
Figures:

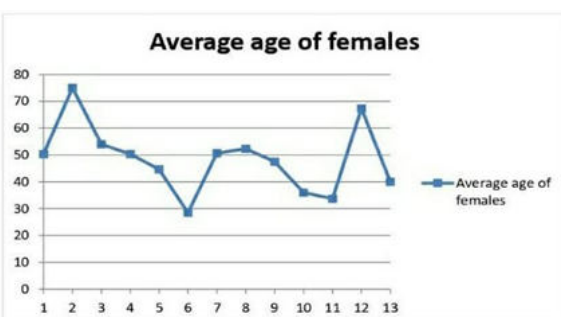**Fig.1. Average age of males infected prior to Deepawali**

Fig.2. Average age of infected females prior to Deepawali
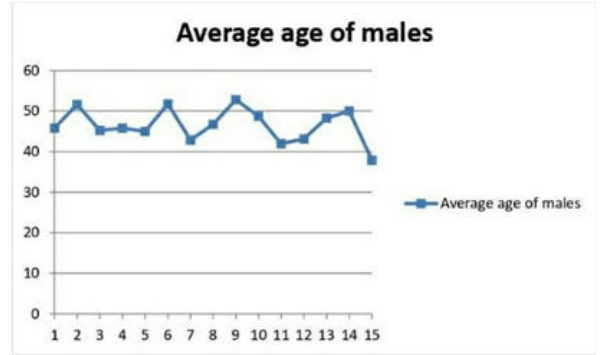

Fig.3. Average age of infected males after Deepawali
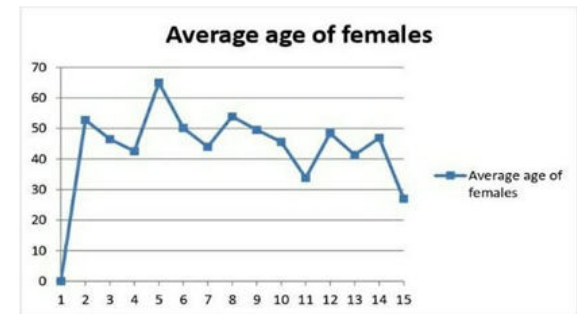

Fig.4. Average age of infected females after Deepawali
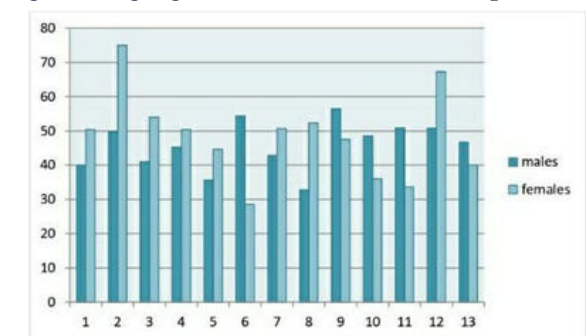

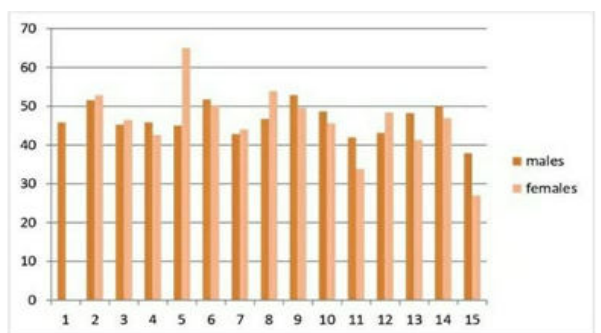**Fig.5. Comparison of Average age of infected males and females prior to Deepawali**

Fig.6. Comparison of Average age of infected males and females after Deepawali

CONCLUSION:
This study was aimed at monitoring the outbreak of COVID-19 in Ujjain district, Madhya Pradesh, India. The study reveals that males are more affected by the corona virus as compared to females. The pandemic got more intense after the Deepawali festival, because some people disobeyed the guidelines set by the Indian Government to prevent the corona virus spread. As per our survey reports, it is clear that most of the infected persons belong to 40-50 years of age, because they have working responsibilities of the family so it is suggested that they should vaccinated first. This led to a

confirmation that congregated places might be one of the banes of corona virus outbreak. The festivals can be celebrated every year all our lives but for that survival should be the first priority. So, people should sincerely take every precautionary measure suggested by the government and WHO.

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