

COVID-19: Quarantine breaks a geometrical Chain: a numerical Analysis

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Idea Originator: Jv'n Dr Panckaj Garg

Acknowledge to the Idea Originator: The idea to analyse the safety measures for containment of Corona Virus (COVID – 19) infection is brainchild of JV'n Dr. Panckaj Garg Sir, who always strives for betterment of community, this study is the part of those chain of efforts being done by him for community development, the basic purpose is to search & study the all safety practices which can be done to combat corona infection & to save the humans from this fatal corona pandemic.

Correlation with Indian Literatures: Notwithstanding contribution of India to Mathematics had been enormous. Referred to Athurveda to see that there are wonderful Sanskrit scriptures explaining various concepts in Mathematics. Frankly thinking, For Indians, Vedas are the knowledge bases and have various values and virtues for the better living for the humane. It is laser fact that the Vedic scriptures are spiritualistic, and there are also various descriptions about the knowledge of advance science concepts in Vedas. Vedas contain enormous amount of knowledge source, though this did not go in depth about the concepts of science and technology but bears basic concept of Fundamentals. Some concepts used in the verses of Vedas which reveals the knowledge on Mathematics, Metallurgy, Especially in the Athurveda, one can find a Geometric Progression there also.

Abstract

There is epidemic outbreak across the Globe as COVI-19, lives are on stake and here author is intended to analyze a model in the frame work of different scientific hypothesis and with the Geometric progression formation and where an infinite sequence and series is possible of the compact population of a country, as data of patients available for the consecutive affected states or countries, it is time to make some inferences about the data. Observed pattern is due to intervention or chance. Here is a wide range of statistical tests possibility of Existence of Models. The decision of which statistical test to be use depends on the research design, the distribution of the data, and the type of variables and mode of computational study, Data of WHO and others to be taken into account spread of COVID-19 is in the Geometric Progression, it may be Arithmetic Progression, even like no progression arrangement with the self distancing, Quarantine as the model to be discussed.

Keywords: COVID-19, WHO, G.P, A.P, Quarantine, Model, Statistics

Introduction

According to a report of ABP News Chanel that publishes the same on its website Hard-hit Italy reported an additional 475 deaths from the virus on Wednesday, and France imposed a draconian lockdown unseen during peacetime. In the

United States, the virus has now spread to all 50 states. The corona virus has now infected more than 200,000 people and killed more than 8,000 globally. The World Health Organization (WHO) is calling for more "aggressive" action to curb corona virus in Southeast Asia after the European Union, now at the epicenter of the pandemic. Chain formation during infection among the different patents is forming a Geometric Progression . Two infected person can infect 4 , and 4 infected persons can infect 8, and 8 infected persons can infect 16 , and 16 infected persons can infect 32 persons , then a Geometric progression is possible as 4 is the first term and 2 is the Common Ratio (c.r)

Let us designate the first term as a , the common ratio as r , then the n th term may found with help of the following formula of a finite Geometric Progression, We would be discussing about the sum of n terms of a Geometric formula just after some moment, kindly see this result for further discussion

Then $a_n = ar^{n-1}$

In this particular case, the expression may be simplified even further since $a_0 = r^2$

$a = 2^{n+1}$

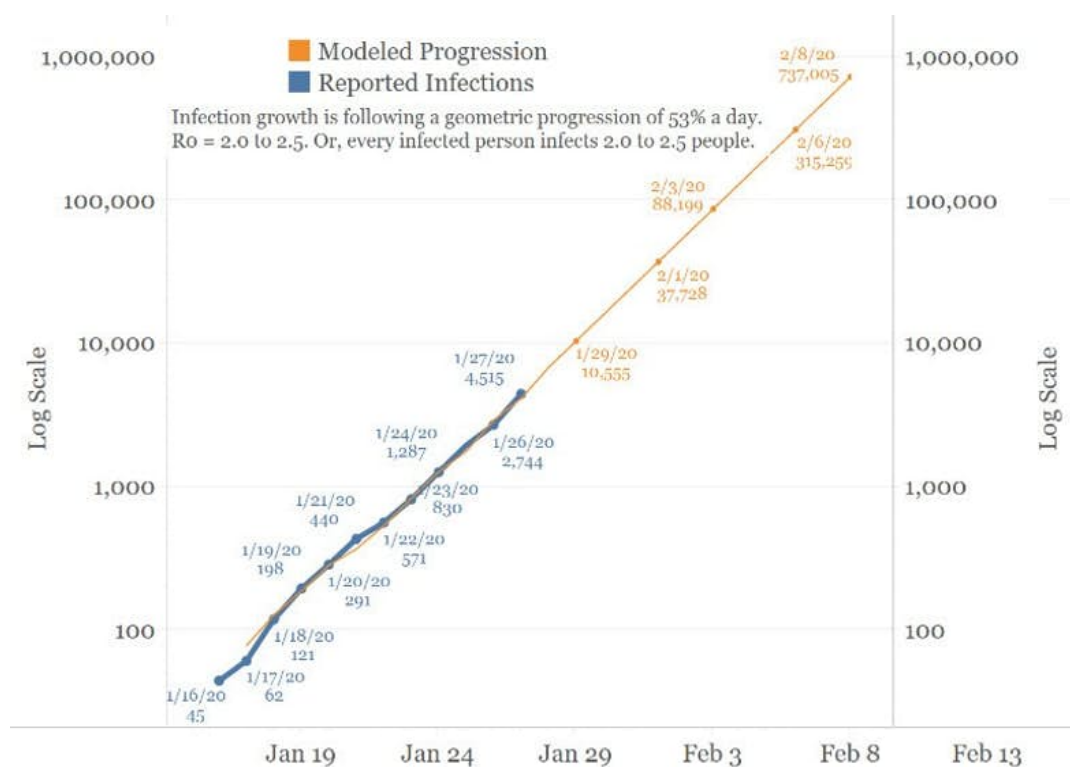
Brief about Geometric Progression and its formation in Data:

Geometric progression is a sequence of numbers or quantities with a common ratio. In a arrangement of Numbers, numbers after the first in the sequence will be a number arrived by multiplying the previous number in the sequence. In such progression a common ratio is maintained between two consecutive numbers of the sequence .For the sake the convenience of the study, let us take a geometric progression whose first term is 2 and common Ration is 3 as 2,6,18,54,-----upto n terms, here common ration is greater than 1

One can imagine , such a geometric progression in which common ratio is less than 1 and this case a very interesting infinite Geometric progression is obtained, who sum may be found with the help of the formula

$S = a/1-r$, where a is the first term and r is the common ration , to aggregate the infinite numbers of COVID-19 infectetious we can use this formula, but the prior condition that should be taken as warranted that it should in continuous in nature , that is, no terms be missing

Now, imagine on another artificial model and , Let us take an example of a Muhalla of a Urban Area or a small segment (Tola) of a village of a Big panchayat and imagine firstof all Mohan of the locality infects 2 persons, again these two infected persons infeted two –two persons separately and if such chain continue upto 50 persons , then according to our calculation from Geometric Progression 2 to the 50th power equals 1,125,899,906,842,624. 2 to the 50th power would be 50 2s multiplied together, means these upto to the infection of 50 th person, there had been 1,125,8999,906,842,624 may be effected by COVID -19, If it is prior supposed that COVID -19 Virus spreads in a chain an form a Geometric as has been claimed by different Researchers across the Globe.



On the above model progression, how at the gap of consecutive 5 days number of infect ants are increasing, On January 19 infection through COVID-19, in a particular country was 100 and on January 24 it Reached to 1000, where as on January 29 this data approached to 10000 and on February 13, it finally reached to 1,000,000

Review of Literature: According to a study last month by some Researchers of Wuhan and China, it reflected Importantly the outbreak of corona virus disease 2019 (COVID-19) has resulted in 46997 confirmed cases. Also the outbreak was first identified in Wuhan, China, in December, 2019, with most early cases being reported in the city of these places. Rather than India, Most internationally exported cases reported to date have history of travel to Wuhan. In the early stages of a new infectious disease outbreak that leads to crucial to understand the transmission dynamics of the infection. Estimation of changes in transmission over time and Analysis for a specific Model Analysis and Break the Chain, that is to miss a particular term of a Geometric Progression And as per the testing capacity of the extraction of such big Data.

During Collection of Primary Data, or the Data provided by the health serving agency in any part of the world sometimes miss quite accuracy, might be due to the error in the computational work of Data feeding or as per the climatic environment of the Hospital Modeling approaches can account for such delays and uncertainty by explicitly incorporating delays resulting from the natural history of infection and reporting processes, related to the suffering patient, means some patient may hide the Data of their infection and that case the progression created by an observer may not be a clear cut defined series or a systematic sequence. It can be guessed as longevity of COVID-19 in China, Wuhan and other part. It is evident fact Data must be systematic with the known variable for the study of any chain and then only it can be suggested some suitable outcomes additionally, individual data sources might be biased, incomplete, or only capture certain aspects of the outbreak dynamics. Evidence synthesis approaches, which fit to multiple data sources rather

than a single dataset can enable more robust estimation of the underlying dynamics of transmission from noisy data. Combining material facts and a mathematical model of severe acute respiratory syndrome corona-virus 2 (SARS-CoV-2) transmission with four datasets from within and outside Wuhan, should be taken and it was a fact estimated how transmission in Wuhan varied between December, 2019, and February, 2020, probably indicating towards a continuous chain of certain model of numbers or some quantities. For the **hilarious** understanding used, classified data, these estimates to assess the potential for sustained human-to-human transmission to occur in locations outside Wuhan if cases were introduced by a system chain of arranged data.

Now, come on the another concept of Number classification and analysis, let there is a constant and there is a variable, and someone is thinking about forming a Geometric Progression from these two Data, now is it possible? Any one can say no! because either two constants alone or variable alone can form a Geometric progression:

$a + ar + ar.r + ar.r.r + \dots$

$2 + 2.2 + 2.2.2 + 2.2.2.2 + \dots$

This property of quantity or Number suggests that dynamic transition of a Virus is more possible in the nature of similar category *living* bodies. Above two examples are indicating on these facts

Methodology/Material & Method

1. Early stages of a new infectious disease outbreak that leads to crucial for understand the transmission dynamics of the infection, estimation of changes in transmission over the time and Analysis for a specific Model Analysis and Break the Chain of number or digit which will proportionate as density of the quarantine population, this generally mean self quarantining and social distancing as governments are doing across the Globe, that is to miss a particular term of a Geometric Progression And as per the testing capacity of the extraction of such big Data must be avoided
2. To analyze a big Data of such Epidemic, Computational Data Mining approaches are more significant, such process can suggest a regular planning and Monitoring by the different agencies of the Governments fighting to Combat such the outbreak
3. As like a bit in Computing, each person is supposed as associated with the whole big data and extraction of any one can extract the mining, means a break log jam for
4. Some Statistical Testing are supposed to be significant as per number of variable taken after breaking the chain and making it as a Non geometric process of expansion of such infection.
5. Throughout the study an infinite Geometric Progression has matter of concern to understand the large scale impact of such infectious Epidemic

Result and Discussion/ Data Analysis& Conclusion: On the basis of the above study and discussion, following facts are clear

We can change the progression of COVID-19, by Quarantine and Social Distancing, from Geometric Progression (G.P) to Arithmetic Progression (A.P) and even a non progression Model as in the formation of a sequence/Series/Progression, missing of a particular term can change the progression and again and again such mistake be done that arrangement of the Mathematical model neither bears a property of a sequence and nor a series and so finally no progression. Hence, here

this mistake in calculation or model formation indicates that if from home to ward, to state and Country, if such no Geometric Progression of existing population be made , COVID-19 expansion can be resisted , it will be very much possible for the Containment of CORONA across the country.

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