IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

THE ROLE OF THE MATHEMATICS IN PANDEMIC TO MANAGE STRESS, IMMUNITY, HYGIENE AND HARMONY

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Abstract

In this article we discuss the role of the mathematics to manage stress, to build immunity and to establish hygiene and harmony in present situation of pandemic. As a mathematician the most important quality you can ever develop is belief in yourself. The belief that you can, without a shadow of doubt achieve success in every area of your life. We discuss the belief in yourself due to the application and vast uses of the mathematics in our daily life in this article deeply.

Using mathematics and mathematical models, we can calculate how fast the corona virus is likely to spread in our society. What controls the answer is called reproduction number R, which is the number of individuals that a typical infected person on average infects at the beginning of the epidemic. We also discuss how to manage stress, hygiene and harmony in the period of pandemic in this article. It is well known to us that stress in varying degrees has become a part of everyone's life due to shift from traditional to modern lifestyle and to live the life of lockdown suddenly in the days of pandemic. Stress may be best defined as a psycho physiological process, usually experienced as a negative emotional state resulting from physical or psychosocial demands. The stress can be categorized and minimized with the help and uses of the mathematics in human life. In recent times, perception of an event is given prominence to study individual's response to a given environmentally demanding situation. A gradual shift in the consensus from external control to internal control has paved the way for new researches. This article is especially supported by emerging concepts in stress research.

Key words

Pandemic, immunity, hygiene, stress, quarantines, belief, reproduction number, cyclical flux, anxiety, inferiority and attitude.

Management of Stress, Immunity, Hygiene and Harmony

Our belief determines the level of stress, immunity, hygiene and harmony in our life. Virtually every person has the capacity to do wonderful things with his or her life, but the greatest single obstacle for most people is self doubt. Many people wish they could accomplish certain things but lack the belief that they can actually do it. When people under achieve in any part of their life, it is their beliefs more than anything else that hold them back. Self limiting beliefs acts as breaks on our ability to achieve our goals. Many of us have high hopes, dreams and aspirations but we let doubts creep in and undermine our talents, abilities and effectiveness. Each one of us has feelings of inferiority because we feel that we are not good enough. We think that we are not as good as other people and we feel we are not good enough to acquire and enjoy the things we want in life. Often we feel that we don't deserve good things. Even if we work hard and have some achievements in our life. We often feel that we are not really entitled to our success. The universal law of belief says that whatever we belief, with feeling becomes our reality. We don't believe what we see, instead, we see what we believe. To develop positive beliefs, you have to decide exactly where you want to end up in the future. The clearer you are about the result you want in your future, the easier it will be for you to change your action and behaviors in the short term. Once you have clearly decided on the type of person you want to be, you will have already taken a major first step in developing new beliefs. In order to incorporate your new beliefs into your everyday life you have to discipline yourself to act exactly in every situation as if you already were that person. When you begin to act like the successful person you want to become, you will actually adopt their values, qualities and characteristics. If you consistently act like the person you want to become everyday and in every situation it will begin a chain reaction. Your attitude will change and become more positive. This will then build stronger and more positive beliefs. And your feelings will then exert a positive influence on your values. You have no limitations on your potential except for those that you belief you have. Successful people are not extraordinary or special in any way. They are not different from you and I. But all successful people do have the unwavering belief that they can accomplish anything that they really want in life. Once you develop that belief in yourself and you act in accordance with your beliefs, your future will be unlimited. Therefore, to build immunity and to get rid of stress and to manage hygiene and harmony belief in yourself is necessary. Once you started to believe in yourself, you could easily manage all anxiety of your life.

Now-a-days the corona virus has spread all around the world. How large would be the spread of corona virus in India? The answer depends very much on what preventive measures are being taken, by ourselves and by the authorities. It is estimated that the reproduction number R, the number infected by a person, is 2.5 before any restrictions or measures have been implemented in a society. Then 60-70 percent will be infected. If nothing is done, this is how many people will become infected in our country. But if we manage to reduce the number of reproductions with different measures, of course fewer will be infected. The magic value is R = 1. As soon as we get the reproduction number below 1 with different measures, it will quickly disappear. China succeeded in this by means of very comprehensive measures, and strategies, so that less than 1 percent will be infected in Wuhan. I am not convinced that it will be as effective in our country. My main area is mathematical models for the spreading of infections, and also statistical methodology for how to determine a model's parameter values, such as R, from outbreak data. It is called "taxes" in statistical language. Mathematical models can model most phenomena, obviously more or less good depending on what it is about. The main principle is to simplify reality and to include only the most essential in the phenomenon of interest, and then to analyze the model and see what happens. For the corona virus outbreak, this is about estimating R by estimating the so-called generation time, which is the typical time between getting infected and infecting others. If we manage to estimate the generation time, for example through contact tracking, and observe the growth rate of the epidemic, then we can deduce what R is approximately. With this knowledge of R we can calculate how many people will be infected if nothing is done. And above all, it provides guidance on how much we must push back the spread of the infection to bring it down below 1 so that the outbreak subsides. When talking about vaccination and disease control, health authorities often invoke "herd immunity." This term refers to the level of immunity in a population that's needed to prevent an outbreak from happening. Low levels of herd immunity are often associated with epidemics, such as the measles outbreak in 2014-2015 that was traced to exposures at Disneyland in California. A study investigating cases from that outbreak demonstrated that measles vaccination rates in the exposed population may have been as low as 50 percent. This number was far below the threshold needed for herd immunity to measles, and it put the population at risk of disease. The necessary level of immunity in the population isn't the same for every disease. For corona virus (covid-19), a very high level of immunity needs to be maintained to prevent its transmission because the corona virus is possibly the most contagious known virus. If people infected with corona virus enter a population with no existing immunity to it, they will on average each infect 45 to 50 others. Each of those infections will in turn cause 45 to 50 more, and so on until the number of individuals who are susceptible to the virus but haven't caught it yet is down to almost zero. The number of people infected by each contagious individual is known as the "basic reproduction number". So the next question is: How well do people transmit the disease? That's called the "reproductive number," or R_0, and it depends on how easily the germ jumps from person to person—whether they're showing symptoms or not. It also matters how many people one of the infected comes into contact with, and how long they are actually contagious. (That's why social distancing helps; it cuts the contact rate.) You might also want the "serial interval," the amount of time it takes for an infected person to infect someone else, or the average time before a susceptible person becomes an infected one, or an infected person becomes a recovered one (or dies). That's "reporting delay." And R_0 really only matters at the beginning of an outbreak, when the pathogen is new and most of the population is House Susceptible. As the population fractions change, epidemiologists switch to another number: the Effective Reproductive Number, or R_t, which is still the possible number of people infected, but can flex and change over time. The whole point of social distancing is to slow the epidemic, to keep the numbers of sick people at any one time below the maximum that the health care system can handle and stall so scientists can work on treatments. If the mathematical calculation is right, the characteristics of Covid-19 might require a cyclical flux between strict social distancing and viral resurgence, on and on, perhaps until 2022. If everything goes right, i.e. massive testing and quarantines of the ill and aggressive social distancing, it'll be possible to keep numbers down and maybe shorten the timeline.

Conclusion

Thus we can conclude that the role of the mathematics to manage stress, immunity, hygiene and harmony is very important. We can reduce the stress by self beliefs with the uses of the mathematics. We can calculate or formulate the conditions of epidemic with the help of the mathematical models. Therefore, the mathematics plays a vital role in pandemic to manage outbreak of corona virus.