The Covid-19 pandemic is a Vitamin D Deficiency problem and is easy to solve

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The Covid-19 pandemic is a Vitamin D Deficiency problem and is easy to solve[1]

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Abstract: In this paper, I argue that the covid-19 pandemic that has ravaged the world's healthcare systems and economies is actually a Vitamin D deficiency problem with an unbelievably effective solution that costs a few cents a day per person but saves lives and trillions of dollars, with zero adverse side effects. Until people worldwide raise their serum Vitamin D levels to 30 ng/mL (75 nmol/L) and above—covid-19 and other viruses will continue to wreak havoc on health and economies. Remarkably, fighting viruses is only the tip of the iceberg of the health problems that high doses of Vitamin D can solve. One way to verify these properties of high doses of Vitamin D for yourself is to talk to someone that you trust who takes more than 5,000 IU of Vitamin D per day. That trusted someone can be a friend, family member, co-worker, someone from your place of worship, or someone from a social network you trust.

Key words: Covid-19, coronavirus strategy, forgotten scientific miracles, Vitamin D solution, crowdsourcing, business model, open innovation, disruptive innovation, status quo, pandemic, pollution

Introduction

Connected dots in scientific research strongly suggest that the covid-19 problem that the world faces is actually a Vitamin D deficiency problem. Until people worldwide raise their serum Vitamin D levels to 30 ng/mL (75 nmol/L) and above—covid-19 and other viruses will continue to wreak havoc on health and economies. Luckily, people can easily raise their serum Vitamin D levels using high doses of the vitamin in supplements that are readily available at negligibly low cost (less than $0.05 a day per person) in stores in the US and other countries.

Back to the Future

To begin to understand why a deficiency in a vitamin can wreak so much havoc on health, we return to the future. For centuries, a maiming disease called *rickets* harassed humanity, especially children. It reached epidemic levels during the industrial revolution that started around 1760—a revolution that was characterized by production of energy from coal-burning power plants that carpeted the skies with smoke and other pollutants, and many people leaving the countryside for work in crowded cities. The populations hit the hardest by rickets were in the industrialized cities of Western Europe and the northern

[1] This paper summarizes and clarifies information from the author's book, "*Forgotten Scientific Miracles*" by Allan Afuah

United States. Healthcare experts scrambled for the cause and cure for the disease, blaming inadequate fresh air, lack of exercise, germs, witchcraft, poor hygiene, poor parenting, and so on. Authorities ordered children stricken by the disease to be isolated. Some doctors used clamps to straighten the characteristic bowlegs of victims, and so on and so on.

The Miracle

It was not until the 20th Century when scientists discovered that rickets was caused by a deficiency in a micronutrient they named Vitamin D. Vitamin D—actually a hormone—is made by our bodies when exposed to the sun's UVB rays under the right conditions. The substance was isolated in 1931, and its structure and synthesis determined in 1932.[1] Adolf Otto Reinhold Windaus had won the Nobel Prize in Chemistry in 1928 for his work on the steroid structures critical to synthesizing Vitamin D. The substance could now be manufactured to tame rickets—a miracle to many relieved parents and loved ones. Some countries got milk fortified with low doses of Vitamin D.

Tip of the Iceberg

For many healthcare professionals, policy makers, and drug makers, rickets was a problem that had been nipped in the bud with low doses of Vitamin D. That was the end of the story for them! However, more scientific research showed that *rickets* was only *the tip of an iceberg* of the numerous other diseases caused or exacerbated by Vitamin D deficiency (Afuah, 2020). The tip of the iceberg could be chipped off using low doses of Vitamin D, but getting rid of the rest of the iceberg would require higher doses.

Indeed, researchers showed that—in addition to its superior abilities in bone and muscle health, cardiometabolic health, and immune function health—Vitamin D is also an anti-inflammatory, antithrombotic (prevents blood clotting), an immune modulator, and a lot more (see references at the end of paper). Thus, for example, a severe deficiency in the vitamin can lead to a compromised immune system, making us very susceptible to viruses (e.g., covid-19, the flu, etc.) and the ravages they inflict on health. Indeed, Vitamin D deficiency causes or exacerbates numerous other health problems.[2]

Just as important, scientists also published the blood levels of Vitamin D that are likely to provide people with these benefits, and the levels below which one is in danger of succumbing to viruses such as covid-19 and numerous other health problems. These categories are: Deficiency (0 to 20 ng/mL), insufficiency (21 to 29 ng/mL), and sufficiency (30 ng/mL and above). Other scientists argued for an optimal level of 40 to 100 ng/mL.[3] Scientists also pointed out the daily intake that can raise a person's serum levels to these optimal levels.

For many people, reaching the 30 ng/mL (75 nmol/L) lower bound for good health requires at least 3,000 IU per day. This is higher than the Recommended Dietary Allowances (RDA) of 800 IU per day, but lower than the Institute of Medicine's Tolerable Upper Intake Level (UL) of 4,000 IU per day and the Endocrine Society's UL of 10,000 per day. This 10,000 IU per day is also the European Food and Safety Administration's No Observed Adverse Effect Level (NOAEL).[4]

Fast Forward to 2020: Covid-19 Pandemic Research

In 2020, as covid-19 ravaged lives and economies, researchers explored a key question: Why do some people who are infected by the virus recover while others do not? One excellent answer to this question came from Raharusun et al. (2020). In their 2020 study of 780 covid-19 patients, these researchers found that 99% of those with serum Vitamin D levels of less than 20 ng/mL died.[5] Just as remarkable, 96% of those with serum Vitamin D levels of 30 ng/mL or higher recovered from the ordeal. These extraordinary results do not surprise those who have read the original scientific research about Vitamin D's capabilities. Even less surprised are those who have been taking high doses of Vitamin D (5,000IU/d or higher) for years.

Just as compelling, the groups that have suffered the most from covid-19 infections and deaths just happen to be the same groups that suffer the most from *Vitamin D defici*ency. These include the elderly, the obese, people of color (especially in the UK, USA, Brazil, South Africa, and Sweden), the poor, people with pre-existing health conditions, people in polluted areas, and people living outside the tropics.

More importantly, the theory behind how Vitamin D works lends even more credence to the argument that the covid-19 problem is a Vitamin D deficiency problem. Even more importantly, you can verify the power of high doses of Vitamin D for yourself by talking to someone that you trust who takes at least 5,000 IU of Vitamin D a day. That trusted someone can be a friend, family member, co-worker, someone from your place of worship, or someone from a social network community you trust.

The question is: Why have our Vitamin D levels dropped so low as to leave us vulnerable to the ravages of covid-19, other viruses and a lot more? That is, why has Vitamin D deficiency become so severe and pervasive?

Why the Severity of Vitamin D Deficiency

Recall that our bodies make Vitamin D when exposed to the right amount of sun and we are in good shape. Thus, anything about your body itself that tempers with its ability to produce Vitamin D, or blocks your sun—e.g., pollution, being outside the tropics, winters, being indoors, etc.—decreases your chances of getting the Vitamin D you need. Today's hyper industrial revolution—like its 18th century counterpart—also

generates lots of electricity using coal-fired plants that spew smoke, blocking the sun from getting to people near the plants. For example, in 2019, China generated 1,005 Gigawatts of power from coal compared to 246 Gigawatts for second place USA, and 229 Gigawatt for third place India.[6] Also, more and more people are staying indoors, getting fatter, becoming metabolically unhealthy, avoiding the sun, becoming deficient in Vitamin D's co-factors, covering up with sunscreen, and so on. These factors are not very good for Vitamin D serum levels. For example, the fatter we get, the more difficult it is for our bodies to make Vitamin D when exposed to the sun. The more metabolically unhealthy we are, the more difficult that it becomes for us to raise our Vitamin D levels. And so on, and so on.

Fortunately for us—thanks to the work of scientists going back to the 1920s—we can raise our Vitamin D serum levels using supplements. For less than 5 cents a day, an adult in the US can purchase what he or she needs to keep his or her serum levels above the recommended lower bound level of 30 ng/mL needed to protect people from viruses and a lot more. Vitamin D is readily available online, in brick-and-mortar drugstores, and some grocery stores.

The ten-trillion dollar question is: If high doses of Vitamin D are the solution to the covid-19 problem—including many other problems—and the vitamin is readily available for 5 cents per person per day, why has it been so difficult for the world to accept this superior solution and move on?

Why the Vitamin D solution has been neglected

There are four major reasons why it has been very difficult to accept Vitamin D as the solution to the covid-19 problem. First, Vitamin D as a solution to covid-19 is disruptive to the business models of many powerful status quo healthcare players, many of whom are ignorant of the effectiveness of Vitamin D and are misinformed about the alleged toxicity of high doses of the nutrient.[7] Second, there was a miscalculation in the Recommended Dietary Allowance (RDA) of Vitamin D that gave many people the false impression that a Vitamin D daily intake of 800 IU was good enough for adult health.[8] It turned out that the RDA of 800 IU per day does not even come close to providing serum levels of 10 ng/mL, let alone the 30 ng/mL that is the lower bound of the levels needed to fight covid-19 and numerous other problems. Third, the covid-19 problem belongs to a category of problems that appear impossible to solve using status quo approaches but become relatively easier to solve using crowds. Determining that Vitamin D is the solution to the covid-19 problem uses the power and wisdom of crowds—an approach that healthcare systems, governments and the World Health Organization have not yet embraced. Fourth, in the face of covid-19, many researchers did not ask the right research question. Most research focused on the question "Why do some people who are infected by the virus recover while others do not?" rather than the question "Why do some people

who come into contact with the virus not get infected, or get infected but have very mild symptoms?" The first question speaks to finding a drug to treat covid-19 infections and not the root cause of the problem. That has meant pursuing status quo drug development processes. The second question is a good step getting to the root cause of the problem.

Conclusion

The covid-19 problem that is harassing the world is the Vitamin D deficiency problem that was solved by scientists in the 1930s. All we have to do to get out of the healthcare quagmire is unbelievably simple: Raise people's Vitamin D serum levels to more than 30 ng/mL (75 nmol/L). Luckily, Vitamin D supplements are cheap and readily available.

It is important to note, again, that one has to build up one's serum levels of Vitamin D to 30 ng/mL or more to enjoy its full benefits. That takes time if one is deficient. You cannot wait until you have been infected by a virus and then turn to Vitamin D hoping it will make the virus disappear right away. Here is the recommendation of Grant et al. (2020):

> "To reduce the risk of infection, it is recommended that people at risk of influenza and/or Covid-19 consider taking 10,000 IU/d of vitamin D3 for a few weeks to rapidly raise 25(OH)D concentrations, followed by 5000 IU/d. The goal should be to raise 25(OH)D concentrations above 40–60 ng/mL (100–150 nmol/L). For treatment of people who become infected with Covid-19, higher vitamin D3 doses might be useful."[9]

Meanwhile, please do what your authorities and scientists tell you to do: Wearing masks, social distancing, thorough washing of hands, etc.

It is interesting to see how we have gone back to the future—to the *rickets* days—and are trying to solve a micronutrient deficiency problem with everything but the micronutrient.

The best way to verify—for yourself—the power of Vitamin D is to contact someone you trust that takes at least 5,000 IU of the vitamin per day, and ask the person what the vitamin has done for him or her. That trusted person can be from your school, family, work, place of worship, social network, or the comments section of a website you trust.

This article is derived from the author's book "*Forgotten Scientific Miracles" (2020)*. The information in the article and in the book is for educational purposes only and is not intended to be medical advice.

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[2] For a list of these diseases, please see (1) Afuah, A N. (2020). Forgotten Scientific Miracles. (2) Vitamindwiki.com

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[7] For easy-to-understand scientific papers on why toxicity is not a problem for high doses of Vitamin D, see Dr. Holick (MD, PhD)'s research. For example: Holick, M. F. (2015, May). Vitamin D is not as toxic as was once thought: A historical and an up-to-date perspective. In *Mayo Clinic Proceedings* (Vol. 90, No. 5, pp. 561-564). Elsevier.
For a list of readings and research papers about Vitamin D, please see:
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