Trust in vaccination is seriously challenged

The use of mRNA technology for vaccines, which the population was made to believe that it fights the spread of a coronavirus, obviously went wrong and might seriously evolve mistrust into vaccination.

Definitions and emphasis on public health tend to change over time (1). Yet, health promotion and disease prevention remain key objectives in any public health definition. Vaccination against infectious diseases is one of the most powerful tools for prevention in public health. However, pharmaceutical companies provide vaccines, and their products are the results of research and developments from pharmaceutical scientists and those in molecular biology and genetics, or, as it is called, the 'omic' technologies (2). Although Thailand sailed through the COVID-19 episode, compared to other countries, comparably without severe disruption to society (3). Especially in so-called 'Western countries', the apparent hesitation of the health authorities to openly discuss what went wrong in handling the spread of a coronavirus is still a major issue. The mistrust in the mRNA technology might finally result in a general rejection of vaccination, which will be a disaster since it is one of the most effective ways to prevent diseases.

The 'pros' and 'cons'

NATURE, one of the two leading science magazines (the other is Science), listed Halidou Tinto as one of ten people 'who helped shape science in 2023.' The African scientist, working in Burkina Faso, is listed for his role in testing a new malaria vaccine, R21 (4). Some years ago, for Africa and some Asian countries, a vaccine had to be developed against the disease to fight poliomyelitis, which reoccurred because of a former vaccine against poliomyelitis (5-8). These are two aspects of vaccination that should be observed. For the mRNA vaccines, It should have been expected that, by all means, a disaster in vaccination should have been avoided instead of using new technology to vaccinate millions of humans worldwide with a product that so far has only been utilized for animals. Despite all warnings, the calamity now threatens to destroy the trust in vaccination within the general public. The danger will be that, especially in low- and middle-income countries facing endemics with serious infectious diseases, vaccination will be met with high suspicion.

A little bit of history

The concept of preventing diseases by exposing the organism to similar but harmless infectious agents goes back to English country doctors observing in the 18th century that dairymaids with cowpox didn't get smallpox. One of them, Benjamin Jesty, in 1774, vaccinated his wife and two boys with cowpox from the udders of cattle (9). However, Edward Jenner made it into history. In May 1796, he inoculated material from the pustules of the dairymaid Sarah Nelms to the 8-year-old James Phipps, the son of his gardener (?), and in July 1796, he challenged the 'vaccination' with cowpox by exposing James with fresh human smallpox (10). The boy got some fever and pain in the axillae but was spared from the human smallpox. Ethical consideration probably was not one of the main concerns for Jenner.

Vaccines are given to healthy persons and should not harm them or even kill

He must have been very confident that his experiment would work, but at least he could be sure that his 'vaccine' as such would not harm the one being 'vaccinated.' However, this is questioned while using a vaccine based on a new technology that was only applied to animals. Rob Roos, a Dutch member of the European Parliament, made a Pfizer representative to 'admit' that the vaccine was never tested whether it stops "transmission." Later, it was added by the company that it was never said that the vaccine could prevent the transmission of the virus but reduce the risk of getting the disease (11). There is no point in quibbling what the company had in mind; the general public was made to believe that the vaccine was capable of stopping transmission. In many countries, those refusing to be vaccinated, unless they already got the infection, could not visit restaurants or use public transportation and might also have lost their jobs from one day to another. What followed was a disaster of historical dimension, which the authorities worldwide are desperately still trying to cover.

Authorities were warned

How Thailand and many other countries went through the COVID-19 calamity (3) and what side effects could be expected from using especially mRNA vaccines are described in the Journal Club on the Faculty of Public Health website, Khon Kaen University (12). Probably only a fraction of public health personnel and other authorities who allowed the use of mRNA vaccine could spell 'messenger ribonucleic acid.' They likely didn't know that genetic engineering made the vaccines possible. Ninety percent of genetic material was formerly described as 'junk,' which scientists now realize is the most crucial part of an extremely complicated genetic system by no means yet fully understood (13). Courageous scientists had voiced the warning to use the vaccine. One of them, a retired German professor of Thai roots, was 'persecuted' through a malicious legal system because he, unfortunately, used an example in history denouncing the irresponsible use of vaccines, which could be interpreted as being antisemitism.

A declaration from Thai scientists

Two Professor from Thailand, one from Chulalongkorn University, and a colleague from Rangsit University most properly will not have to face the court when they announced on the 14th of February 2024 that they would cooperate in investigating the 'situation regarding COVID-19 testing conditions and the impact on the COVID-19 vaccine to the fellow citizens' in Thailand (14).

Their intention was reported in the Bangkok Post newspaper, which can still be traced through Google, but the full text of their announcement can no longer be found as an English text. Prof. Teerawat Hemajutha from Chulalongkorn University and Prof. Panthep Puapongphan from Rangsit University listed eight reasons why they will look into Long Covid-19 symptoms and the effects of vaccines. It is claimed that infection and vaccination not only diminished the quality of life but still caused cancer and widespread diseases throughout the organism and death. These effects are severely underreported. It is estimated that more than twenty times more events happened than reported in the US VAERS (Vaccine Adverse Event Reporting System). Despite

the apparent damage to health and life lost, the immune system is altered, causing the individual to be more prone to further infections.

The Hippocratic principle

It remains to be seen how successful the two Thai professors will be. It is one of the very rare attempts to try to lay open what caused the disasters of the COVID-19 event. The promise of the biotechnology and pharmaceutical industries that mRNA vaccines would transform areas of medicine became true (15), but not in the sense the authors had in mind. Public health failed to protect the population worldwide from inappropriate instruments. The Hippocratic principle of 'non nocere' (do not harm) was seriously violated (16). For the sake of medicine, particularly for public health, it is essential to realize what went wrong and how to prevent it in the future. Public health experts must have the knowledge and authority to convince the virologist that the populace is not a cell culture to study how the virus multiplies.

The term 'Long Covid' and its aftereffects mix the harmful effects of vaccination with the disease

The disease Long Covid and its aftereffects are usually discussed in view of the coronavirus infection, disregarding the similar outcomes due to vaccination as such (17, 18). In the future, the mRNA vaccine will be the major technology despite the negative experience because of 'its safety, efficiency, potency, and low costs for its manufacture', as authors in favor of the genetic engineering products write (19). Recently, a SARS-CoV-2 single-dose vaccine for aerosol immunization was described (20). Those who are afraid of further 'obligatory' vaccination claim that the technology might be an advantage.

Further development of genetic engineering for further pharmaceutical products

Further developments are equally worrisome due to the uneasy feeling about the potential danger of mRNA vaccines. Laboratory science is working on the creation of 'exotic' amino acids to be inserted into proteins for the 'design of protein-based drugs resistant to bodily enzymes.' These proteins, consistent with artificial amino acids not occurring in nature, cannot be readily degraded like alpha-amino acid-based proteins and are considered beneficial for further novel pharmaceutical products (21-23).

New to most, artificially designed amino acids seem to have been in use for some time already. An editorial in Science magazine already mentioned an internationally approved COVID-19 vaccine, SKYCovione. The editorial has several recommendations on how biosecurity can be assured. According to the suggestion, all institutions working with this technology, and they are limited, should lay open their research projects. In case of an unwanted occurrence, one would know from the protein design from where the substance escaped. An international group should take the lead in organizing such a control system. For scientists, a major drawback is that they must lay open their project with the danger that other groups will quickly copy it (24).

The example of 'gain of function' research, which cannot be ruled out as the origin of SARS-CoV-2, still goes on seemingly undisturbed. Can any sort of arrangement finally prevent a

catastrophe with artificially designed amino acids? The aspect that, in the end, all testing on animals in the not-so-distant future will end and be substituted by ‘advanced methodology that doesn’t involve animal testing’ (25) might leave human beings to be the final test subject for the pharmaceutical industry.

Conclusion

Public health should become the advocate for society, resisting exposing the population to potentially dangerous remedies. Special treatments in curative medicine, such as for cancer patients or those suffering from inherited life-threatening diseases, are well accepted. It is up to those in the curative settings to decide how the patient should be treated and which remedy to use. They have to weigh helping the patient against causing more harm. Vaccination involves healthy individuals who should not be diseased by the vaccine. Scientists fascinated by their fields of research and development, resorting to innovative new methods, should seriously consider the concepts and aims of public health. Those academics in public health should be eager to study and comprehend what the scientists are up to and what benefit can be expected concerning the population as a whole. It is high time to allow and not resist a rigorous investigation into what went wrong during the years the world was thrown into what will probably be known in history as the dark second decade of the 21st century while a virus destabilized society.

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Frank P. Schelp is responsible for the manuscript's content, and the points of view expressed might not reflect the stance and policy of the Faculty of Public Health, Khon Kaen University, Thailand.

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