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Hot Topics

The COVID-19 Vaccine: Why the Hesitancy?



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The international impact on public health pushed a variety of private and governmental organizations to work together to address the pandemic. Great investment was seen by The National Institute of Health who led the science, Centers for Disease Control led the investigation of the infection's impact on public health, the Food and Drug Administration addressed the regulatory pathways, the World Health Organization (WHO) served as an international resource, and the US Department of Defense used their research and development division. These government agencies worked closely with public and private organizations worldwide to provide communities with necessary supplies and work toward the development of vaccines that would protect against the COVID-19 virus. Vaccines historically took up to 10 years for development and approval. In 2020, the organizations involved in COVID-19 vaccine research and development benefitted from years of prior research on DNA/RNA sequencing (previously used in the fight against cancer). Expedited processing of documentation, increased access to resources (such as funding, experts, and materials), and a worldwide focus on COVID-19 over other viruses allowed safe and successful vaccines to be developed in as little as a year (WHO, 2021a,b). According to the WHO, there are currently over 74 COVID-19 vaccines in clinical development and over 180 COVID-19 vaccines in preclinical development (WHO, 2021a).

The anticipation of a COVID-19 vaccine was seen by many as a "light at the end of the tunnel." Social media was ablaze with excitement as those early adopters looked forward to the development and approval of a vaccine to protect not only themselves but also their friends, families, and the patients they serve. The first mRNA vaccines to be introduced were put through rigorous trials; over 43,000 people participated in the Pfizer vaccine trial and 30,000 in the Moderna vaccine trial, with half of those involved receiving the vaccine and half receiving a placebo. There was an average efficacy rate >94% at preventing the COVID-19 illness in those who received the vaccine. There were no deaths from those trials, and in both trials, the severe cases of COVID-19 occurred in participants who received the placebo (Baden, 2021,

Polack, 2020). On the horizon are also viral vector vaccines (i.e., Johnson & Johnson) that use a live yet harmless COVID-19 virus to stimulate the recipient's immune response: early results are showing an efficacy rate of >85% without serious adverse reactions (Sadoff, 2021).

Very quickly, although, a flood of misinformation influenced many around the world, slowed their acceptance of a COVID-19 vaccine, and even prevented their acceptance of it. Opposing opinions further divided groups of people and created near hostile attitudes toward the COVID-19 vaccine. Social media allowed constant sharing of inaccurate information from any source with a voice and a message (most lacking scientific evidence). Conspiracy theories, paranoia, finger-pointing, and radical theories became daily reminders to those who were easily influenced or were otherwise uncertain about the COVID-19 vaccine. Politics, racism, inequality, discrimination, and xenophobia fueled the incivility of many to turn against those with different opinions, religions, lifestyles, or cultures. The WHO warned of a second epidemic occurring called an "infodemic": the rapid and excessive spread of inaccurate information that is fake, lacks scientific evidence, is often used to advance an agenda, and ultimately delays achievement of a solution to the problem at hand (Vergara, 2021; Naeem, 2021). The COVID-19 infodemic is a public health crisis that has been difficult to control because it is responsible for the dangerous spread of conspiracy theories, pseudoscientific therapies, and other misinformation (WHO, 2020b). Sadly, some of those in the forefront of the infodemic are public figures, such as religious leaders, government leaders, celebrities, sports stars, theorists, pseudoexperts, journalists, and health care workers (HCWs).

In December of 2020, a review of 30 studies from 33 countries showed countries with the highest vaccination rates were Ecuador (97%) and Malaysia (94%), whereas those countries with the lowest vaccination rates were Kuwait (24%) and Jordan (28%). Eight surveys of HCWs revealed a wide range of COVID-19 vaccine acceptance rates from a high rate in Israel (78%) to a low of 28% in the Democratic Republic of the Congo (Sallam, 2020). Other studies reported vaccine hesitancy among HCWs averaged around 30% (Detoc, 2020; Khullar, 2021). One study of 3,479 American HCWs found that only 35% of the respondents were eager to receive the vaccine, whereas 56% were hesitant (Shekhar, 2021). In a different study of 672 adults in the United States, 67% responded they would accept a COVID-19 vaccine (Malik, 2020). Sadly, there are at least 125 countries yet to receive any vaccine at all (Besheer, 2021).

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- ◆ Concerns for:
 - vaccine came out too fast (not enough research)
 - mRNA contains a live virus
 - will cause cancer or infertility
 - vaccines in general don't work, aren't safe, are of poor quality
 - potential for serious long-term effects of the vaccine, how long will the immunity last
 - no guarantee a 2nd dose would be available
 - uncertain it will cover the mutant strains of COVID-19
 - conflicting information and instructions from governing agencies
 - mRNA vaccines have higher risk of abnormal immune dysfunction, allergy or death
 - risk to pre-existing condition
 - deportation if questions arise regarding immigration status
- ◆ Mistrust of:
 - healthcare industry (profit over safety)
 - government, politicians, leadership, other countries
 - science
 - doctors
 - country producing the vaccine
 - legitimacy of less well-known manufacturers
 - governing agencies (FDA, CDC, WHO, etc)
 - “Warp Speed” and FDA “Emergency Use Authorization”
 - societies trying to hurt others with the vaccine
 - unethical research practices involving under-represented groups of people
- ◆ Religious leaders teaching followers (Ultra-orthodox Rabbi, Iranian Cleric)
 - COVID-19 vaccine causes homosexuality
- ◆ Individual fears or beliefs:
 - allergic reactions to vaccines
 - vaccinations violate one's personal freedom
 - low risk category, no need to vaccinate
 - vaccine effectiveness not proven
 - questions regarding accurate dose
 - COVID-19 is not a severe infection
 - risk of vaccine side effects,
 - afraid of needles
 - vaccine is too expensive
- ◆ Conspiracy theories
 - COVID-19 is a hoax
 - “Infidel vaccine”
 - man-made bioweapon virus used for terrorism or other personal interests
 - COVID-19 attributed to Jews, Muslims, Asians, Bahais, immigrants
 - target Islamic nations, so Jews can rule the world
 - mRNA COVID-19 vaccine will alter a person's DNA
 - use some minority populations to experiment on
 - US Army infected Wuhan, China with the COVID-19 virus
 - COVID-19 has similarities to HIV
 - vaccine made of monkey or pig derived products (forbidden according to the Quran and Torah)
 - contains a surveillance microchip to be tracked by 5G towers
 - vaccine contains fetal tissue
 - vaccine trials did not include at risk groups, minorities, children, pregnant women, elderly, immunocompromised, or those with severe allergies

Figure 1. Reasons for COVID-19 vaccine hesitancy. (Shekhar, 2021; Malik, 2020; Mallapaty, 2021; Lancet, 2020; Khullar, 2021; Attwell, 2021; Detoc, 2020; Park, 2020; Xu, 2021; Khan, 2020; Ahuja, 2020; Wong, 2021; Batchelor, 2021; O'Neill, 2021; Ali, 2020; Oplndia 2020a; Oplndia 2020b;CDCb, 2021; Milko, 2020; Naem, 2020; Pradhan, 2020; Rothstein, 2020; Whatley, 2020).

Individual beliefs regarding the vaccine safety stem from knowledge of real and theoretical risks to those based in propaganda and unfounded claims. Social media platforms and certain media outlets have been particularly damaging to the scientific knowledge dissemination during this pandemic. Mistrust of some leaders has occurred, especially when those without authority or scientific expertise speak to the issues of the pandemic. **Figure 1** lists some examples of why people are hesitant or resistant to be vaccinated.

Reasons for COVID-19 vaccine hesitancy

The pandemic will continue well into 2021. Solutions to the problem of vaccination hesitancy are needed. This includes a global effort that will address the infodemic and improve education to increase the vaccination rates. **Figure 2** outlines some key actions that will be necessary.

Key actions to improve vaccine usage

Since the beginning of the pandemic in 2019, our world has changed prompting most people to have a dream of returning to “normal”. Increasing the vaccine rates is an important step toward protecting our communities, building herd immunity, and controlling the pandemic. Some employers, governing agencies, and countries have discussed the possibility of mandating the COVID-19 vaccine. Legally, this is a difficult discussion with many variables that can be argued. Most legal experts agree that as long as it is still under “emergency use authorization”, it could be argued to be “experimental” and would be tied up in the courts for a very long time (Rothstein, 2020; Flood, 2021; Khullar, 2021; Vergara, 2021). It is our most favorable option available to continue to flood the listeners with accurate information regarding the COVID-19 vaccine and keep the momentum going until this pandemic is a distant memory.

- ◆ Leaders must be role models, providing vaccine safety education based on science
- ◆ Media should avoid reporting false information (must refer to medical/official sources)
- ◆ Public education should be delivered using popular avenues
 - social media platforms, popular television/radio shows, blogs, websites, religious gatherings
- ◆ Use intentional transparency to guide listeners through vaccine development and approval: funding; safety testing; efficacy
- ◆ Intentional transparency is needed to inform the public about all aspects of vaccine development
 - safety, efficacy, approval, and funding,
- ◆ Professionals should address the public's fears and concerns while showing respect for the individual
- ◆ Nursing actions and influence will help advance acceptance of vaccination programs as nursing is a highly regarded health profession
 - making nursing a valuable partner and very visible should enhance vaccine acceptance
- ◆ Targeting messaging and outreach to hesitant or resistant groups is essential. This should take into account historically marginalized groups or those that have been misled in the past.
- ◆ Professional organizations and societies need to inform members of current information in a timely manner.
- ◆ Misinformation should be targeted for correction and accurate up-to-date information provided by media and healthcare professional
- ◆ Healthcare professional should be engaged in teaching patients/public about ways to recognize misinformation and "alternative facts" and provide information on where to access reliable resources and news
- ◆ Leaders should have access to scientific reports/literature to share with the people they represent/lead.
- ◆ Education of the healthcare providers, community leaders and public needs to be ongoing.

Figure 2. Key actions to improve vaccine usage. (Attwell, 2021; Detoc, 2020; Shekhar, 2021; Whatley, 2020; Malik, 2020; Naeem, 2021).

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