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RESEARCH ARTICLE

Praxis of Technology and Tools in COVID-19 Response

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ABSTRACT:
The ongoing COVID-19 pandemic has affected around forty million people worldwide and causing over a million deaths. Since no treatment guideline is considered the most efficient, and with no vaccine approved for prophylaxis, currently the COVID-19 response demands efficient use of available technology and tools in medical field for controlling the disease. The knowledge and experience gained from the epidemics of Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, and Zika virus play a pivotal role in this pandemic response. The required technologies and tools are adapted from the existing technologies and are modified to serve the purpose of COVID-19 response which is applied in the prevention, diagnosis and treatment of Coronavirus infection. The technologies applied at the prevention stage aims at limiting the spread of infection by using personal protective equipment, contact-tracing, and modelling. At the stage of diagnosis, technologies are used efficiently and the correct diagnosis of infected cases is done by molecular, immunological testing and radiological imaging. Artificial-Intelligence is employed in building applications that use the available information and radio-images to aid in differential diagnosis of Coronavirus infection. The treatment in COVID-19 incorporates technology in both in-patient and remote care of the cases. Though the COVID-19 response strategy differs from country to country, it is devised based on the recommendations made by the international health authorities such as the World Health Organization (WHO) and the National Center for Disease Control and Prevention of the United States (NCDCP-US). The controlling of the pandemic depends on the collective effort of all nations which rest on efficient scientific communication and in the advancement of the medical field.

KEYWORDS: Artificial-Intelligence, prevention, diagnosis, treatment, application.

INTRODUCTION:

COVID-19, the 21st-century pandemic caused by the novel Coronavirus (SARS-Cov-2) originated from Wuhan, China[1]. The infectious disease spreads by air droplets and by contact with surfaces contaminated by the virus[2]. The World Health Organization (WHO) declared the disease as a Public Health Emergency of International Concern (PHEIC) which emphasized the responsibility of public and health care to prevent transmission of infection[3].

At the time of writing this paper in October 2020, COVID-19 has caused over one million and one hundred thousand deaths and the total number of cases was approaching forty million[4]. The worst affected countries were the USA, India, and Brazil topping the chart[4]. The European region, which was believed to be the most developed and capable of handling the pandemic, too was affected and experienced more than one wave of the infection. The variability in the cases among the regions could be attributed to the response of the nation in controlling the spread of the disease and the treatment strategies[1]. To date, no treatment is deemed to be the most effective and no prophylaxis is available. Almost every country in the world has adopted the 'prevention is better than cure' strategy in handling the pandemic. The strategy includes practicing hygiene by frequent sanitizing of hands, using face masks and other necessary Personal Protective Equipment (PPE),