

THE FACTS ABOUT CORONA VIRUS DISEASE (COVID-19): THE CURRENT SCENARIO AND IMPORTANT LESSONS

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ABSTRACT

This paper discusses the important review about the Corona Virus Disease (COVID-19) and main facts about it. Epidemiological and Clinical Characteristic of Patients With COVID-19: The Wuhan city in China, faced an outbreak of coronavirus disease 2019 (COVID-19) since December 2019, with extreme acute respiratory coronavirus syndrome 2 (SARS-CoV-2) being the causative agent. The clinical characteristics and the epidemiological criteria for COVID-19 patients were described. Still, the risk factors for mortality and a clear course of the disease clinically, including viral shedding, have not been identified. Corona Virus and its Types: Coronaviruses are a group of viruses belonging to the Coronaviridae family which infect animals as well as humans. The name "coronavirus" was developed in 1968, which stemmed from the morphology similar to "corona" or crown-like. The *Coronaviridae* family (order *Nidovirales*) classifies into four genera of CoVs: Alphacoronavirus (alphaCoV), Betacoronavirus (betaCoV), Deltacoronavirus (deltaCoV), and Gammacoronavirus (gammaCoV). Furthermore, the betaCoV genus divides into five sub-genera or lineages. COVID-19 Strategic Prevention on different levels: In dealing with COVID-19 challenge, most countries are practicing a mix of inclusion and stopping crowds hoping to delay an increased number of affected individuals and minimizing the need for hospital facilities, as well as securing those at higher risk from being infected, especially old age population and people with long-standing illness

Keywords : COVID-19, Corona virus types, Epidemiological characteristic, Prevention.

Epidemiological and Clinical Characteristics of Patients With COVID-19:

The Wuhan city in China, faced an outbreak of coronavirus disease 2019 (COVID-19) since December 2019, with extreme acute respiratory coronavirus syndrome 2 (SARS-CoV-2) being the causative agent. The clinical characteristics and the epidemiological criteria for COVID-19 patients were described. Still, the risk factors for mortality and a clear course of the disease clinically, including viral shedding, have not been identified.

In that retrospective cohort study, which was conducted in different centres (Fei et al., 2020), all the adult hospitalised patients were included (≥ 18 years old) laboratory-confirmed COVID-19 from Jinyintan Hospital and Wuhan Pulmonary Hospital (Wuhan, China) discharged or died before January 31 2020. The number of cases was 191 patients (out of the 191 there was 135 from the Hospital of Jinyintan and 56 from the Pulmonary Hospital of Wuhan), and these cases were part of that cohort study, those who discharged were the majority of 137 patients, and only 54 passed away in that hospital. The statistical analysis expressed that chances of hospitalised death correlated with those older in the age group with p -value =0.0043, also significant with a higher level of the Sequential Organ Failure Assessment (SOFA) score with $p < 0.0001$, upon being admitted to hospital, the time of the median viral shedding was of 20.0 days in survivors. Still, coronavirus was possible to be detected until subjects passed away in non-survivors. The longest time for the dropping of the virus was noticed in survivors until 37 days (Fei et al., 2020).

The median time to discharge from disease onset (i.e. before admission) was 22.0 days (IQR 18.0–25.0), while the median time to death was 18.5 days (15.0–22.0); 32 patients needed to be on invasive mechanical ventilation; of them, 31 patients (97%) passed away. The median duration from onset of disease to the need of the mechanical ventilation was of 14.5 days (12.0–19.0). One of the main complications was the sepsis attack, accompanied by a failure in the respiratory system, cardiac failure and septic shock. 50% of those who could not survive had a secondary infection, and ventilator-associated pneumonia occurred in ten patients (31%). The prevalence of complications was more in those not survived as compared to those sustained (Fei et al., 2020).

It was also found that patients with diabetes mellitus or coronary cardiac disease had higher chances of in-hospital death (Fei et al., 2020). Heart-related complications, including new cases of heart failure, new cases or already existed of arrhythmia, or myocardial infarction, were high in those patients with pneumonia. Heart arrest occurred in 3% of hospitalised patients with pneumonia (Marrie et al., 2007).

Medina also found that there is a strong relationship between cardiac events after pneumonia and elder age, history of cardiovascular diseases (Medina et al., 2013).

Coronary heart disease found to be connected with acute heart events and worse outcomes in influenza infections and other viral respiratory infections (Medina et al., 2013, Udell et al., 2013, Blackburn et al., 2015).

Additionally, the SARS- receptor, angiotensin-converting enzyme 2, is found on the cardiac myocytes and endothelial vessels cells (Gallagher et al., 2008, Torres et al., 2015). This indicates that the probability of heart involvement directly by the virus is at least theoretical. Note that interstitial mononuclear inflammatory infiltrations in the cardiac tissue were identified in fatal COVID-19 cases, although no studies for viral detection have been reported (Xu et al., 2020).

While the 2019 coronavirus disease outbreak (COVID-19) develops, epidemiological data are critical for guiding the strategies and methods of situational understanding and intervention. This analysis here illustrates the efforts to collect and disseminate clinical and epidemiological Data from various scholars about COVID-19. We checked in data on COVID-19 from the china local health authorities in one population-level observational sample. They compiled a list of single COVID-19 patients and updated daily for the province-level of case counting from January 13 and January 31, 2020, in China. They also assembled a list of COVID-19 subjects, which were distributed internationally. They looked at patterns in COVID-19 epidemiology and evaluated the progression of outbreaks across China, assessed delays between onset of symptoms, seek hospital or clinic treatment and reported before and after January 18 2020, as the level of awareness increased the sudden epidemics. Information had been made accessible to the public in real-time. We find that data were collected between January 13 and January 31, 2020, for 507 patients with COVID-19, out of the 364 living in the mainland China and the others 143 patients

staying outside of mainland China. 281 patients (55%) are male gender and of median age of 46 years. Less patients 13 of them (3%) were among younger age group who are younger than 15 years. The profile of Chinese patients age confirmed a less of infections among children. Delays between starting of symptoms and finding treatment in a health setting of clinic/ hospital were longer in the Hubei province than in other regions in mainland China and globally over the timeframe studied. The duration was reduced from 5 days to 2 days as compared from the period before January 18, 2020 and the thereafter until January 31 with p value=0.000, that's showed the level of awareness and understanding was higher before and after January 18 2020 although our sample captures only 507 patients with COVID-19 reported by official sources (Kaiyuan et al., 2020).

Human-to-human transmission has been found through the respiratory droplets of sneezing or coughing, as the number of cases that were not introduced to the animal market has risen and health workers have also encountered cases (Huang et al., 2020).

The transmissibility level of coronavirus disease was shown and estimated at 4.08 (Cao 2020) indicating that any patient with COVID-19 can produce up to four new cases on the average level. Then this rate was considered to have risen 21-fold after January 17, 2020, compared to the early of January 2020 (Zhao 2020). For the incubation period, it is estimated at 5.2 days, and show considerable variability among patients (Li 2020), and the patient can spread infection asymptotically (Rothe 2020, Ryu 2020).

Fever, chills, dry cough, coryza, sore throat, trouble in breathing, myalgia, nausea, vomiting and diarrhoea are main signs for the disease (Chen 2020). Elderly age group, people with medical illnesses and problems are at higher risk to become sick and with more severe symptoms (Chen 2020).

Patients with advance symptoms can cause heart attacks, failure in the respiratory system and end life (Holshue 2020).

WHO stated that the death rate is around 2%, although other studies and centres sated the range from 0.3% to 0.6%. (Nishiura 2020).

Corona Virus and its Types:

Coronaviruses are a group of viruses belonging to the Coronaviridae family which infect animals as well as humans. The name "coronavirus" was developed in 1968, which stemmed from the morphology similar to "corona" or crown-like (Tyrrel et al., 1968). The *Coronaviridae* family (order *Nidovirales*) classifies into four genera of CoVs: Alphacoronavirus (alphaCoV), Betacoronavirus (betaCoV), Deltacoronavirus (deltaCoV), and Gammacoronavirus (gammaCoV). Furthermore, the betaCoV genus divides into five sub-genera or lineages (Chan et al., 2013).

Alpha coronaviruses 229E and NL63, and beta coronaviruses OC43, HKU1, SARS-CoV (SARS), MERS-CoV (the coronavirus that causes Middle East Respiratory Syndrome or MERS) and SARS-CoV-2 (COVID-19) are the seven types of coronaviruses that can infect human. Coronaviruses can infect humans and

animals and cause diseases of the respiratory, digestive, liver and central nervous systems (To et al., 2013). COVID-19 is a beta coronavirus in the same genome sequencing and phylogenetic study as, but in a separate clade, the extreme acute respiratory syndrome (SARS). The receptor-binding gene region's structure is very similar to that of the SARS coronavirus, and it has been shown that the virus uses the same receptor, the angiotensin-converting enzyme 2 (ACE2), for cell entry (Zhou et al., 2020).

In Wuhan, China, the first cases of Covid-19 infected were identified in late December 2019 and then spread worldwide. The outbreak initially seems to have been triggered by zoonotic transmission at the setting of a food market in Wuhan, where live animals were sold (Guo et al., 2020). Some of the patients had been operating or visiting and were then closed for disinfection (WHO 2020). However, as the epidemic progressed, the primary mode of transmission was spread from person to person. On January 12 2020, the World Health Organization named this coronavirus the 2019-novel coronavirus (2019-nCoV), after which the disease was officially known as the 2019 coronavirus disease. (COVID-19) (Guo et al., 2020). On March 11 (2020), Covid-19 has been declared a global pandemic by the World Health Organisation. Infection with the Covid-19 virus can spread to others by tiny droplets from the nose or mouth through coughs or exhales of COVID-19. Such droplets are focused on objects and surfaces so other people may receive COVID-19 by touching such objects or surfaces and then rubbing their eyes, nose or mouth by breathing in coughs or droplets. (WHO, 2020).

COVID-19 Strategic Prevention on different levels:

In dealing with COVID-19 challenge, most countries are practising a mix of inclusion and stopping crowds hoping to delay an increased number of affected individuals and minimising the need for hospital facilities, as well as securing those at higher risk from being infected, especially old age population and people with long-standing illness (WHO, 2020).

Most plans utilise different manoeuvres of contact control and self-isolation or quarantining; upgrading the implementation of public health hygiene, including hand wash, respiration habits, and social distancing; readiness of health systems to face a sudden rise of advanced illness cases who need isolation, oxygen, and a ventilating machine, with a deferral or even cancelling significant mass occasions.

The evolution of Covid-19 in China in late 2019 as a pathogen than infects by the droplet infection leading to the COVID-19 pandemic has alerted the world to local, global, and pandemic spread mainly due to mass gathering events. Starting March 2020, there has been a sharp action taken in cancellation of religious, athletic, musical, and other mass gatherings as countries all over the globe made decisions to stop the spread of SARS-CoV-2. Many famous mass gatherings have been deferred to a later time, including concerts and sports events such as the Olympic games in Japan and the pilgrims in Saudi Arabia (Ebrahim & Memish, 2020).

The effect of non-symptomatic cases in the transmission of the virus is not yet apparent to a large extent. Pre-symptomatic possibility of

infecting is a challenge, and many nations are considering one to two days from symptoms appearance as the first day for identification of contact (Zou et al., 2020, Kim et al., 2020).

COVID-19 is a disease of special consideration, and immediate actions in critical care were taken to adapt to the severity of cases. Emergency situations such as COVID-19 pandemic can be a tough test for intensive care doctors, who require adequate comprehensive skills to deal with properly.

From 2009 to 2019, more than 18000 doctors joined the Critical Care Certified Course program in China, out of which more than 13000 were emergency medicine practitioners. This program covered more than 30 provinces. Courses in this program are provided by an inter-professional crew; multidisciplinary care is essential to reduce death rates for patients in critical care units (Wu & McGoogan, 2020).

Emergency and critical medicine have an obvious role in a public health emergency. Such specialised training applied in this program benefits in the development of critical-care medicine specialities and enhances the skills of physicians, resulting in teams that are efficiently prepared to face different emergency cases in the ICU (Ji et al., 2020, Kim et al., 2010).

SARS-CoV-2, same as any severe new pathogen, has affected health personnel in China and other countries. Till now, in China specifically, where prevention and control of the infection have been considered earnestly, hospital-acquired transmission has not been a significant cause of the spread of the epidemic.

Reports from China show that maybe to 85% of human transmission has taken place within families and that more than 2000 health professionals were affected by the virus, in the absence of significant hospital-acquired significance and some reports showed that quite a number health personnel got infected at their homes (WHO, 2020, Wu & McGoogan, 2020)

As nations are being affected by (COVID-19), the older citizens will be requested to be isolated for "a long period". This attempt to consign the older, and thus protect exhausted health facilities, emerges as nations order for lockdowns, movement control orders, and social distancing to better control of spreading of the severe acute respiratory syndrome (SARS-CoV-2) (BBC, 2020).

However, social isolation among the old population is a "serious public health issue" due to their high probability of CVS, immune, and psychological troubles. It is recently apparent that social isolation puts the elderly at a high risk of anxiety and depression.

If health systems advice older individuals to stay put at home, have their grocery supplies and essential medical supplies delivered, and avoid contact with others, immediate action is required to control mental as well as physical complications (Emerson & Jayawardhana, 2015).

Online applications can be implemented to give social support and to care, although there might be discrepancies in the use of or knowledge of digital applications. Interventions can be more frequent phone calls contact with the elders, volunteers, health personnel, and community

services that can provide adequate help during these times. Besides, behavioural therapy could be done online to reduce the feeling of being lonely and enhance or motivate psychological status. Isolation of the elders may control the spread, which is most essential to bring down the number of infections and decrease the transmission to higher-risk individuals. However, the isolation strategy can taper in the long run. Such isolation measures should be time sufficient to prevent spread, but minimise the morbidity of COVID-19 associated with psychologic problems (Newman & Zainal, 2020, Hesse et al., 2020).

All nations must immediately trigger extreme levels of local critical management plans to make sure that the whole governmental and society approaches required to control COVID-19 with non-pharmacological measures. This includes throughout education and raising the awareness of the community on the importance of their role and response. Decision-makers must ensure that well-experienced community personnel are ready, along with quarantine facilities, revised hospital plans, and lab schemes (selection of individuals to test, how, when and where).

China implemented extraordinary public health measures at great socioeconomic cost, moving rapidly and firmly to ensure early identification of cases, prompt laboratory testing, isolation of cases, contact tracing, and quarantine. In the community, mobility was almost stopped, with social distancing applied at a large scale. China's massive transmission rates called for extreme measures, and the rules were successful (Wilder & Freedman, 2020).

Coronavirus disease 2019, commonly known as “COVID-19”, is an infectious disease caused by a novel coronavirus named “SARS-CoV-2” introduced to humans for the first time (WHO,2020). This emerging respiratory disease was first detected in December 2019 in Wuhan, China (The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team, 2020). The disease is highly contagious, and human-to-human transmission of COVID-19 is mainly via respiratory droplets or direct contact. Most people infected with COVID-19 developed mild symptoms such as fever, cough or shortness of breath (MOH, 2020). About 16% of reported cases – mostly elderly with chronic medical conditions, progressed into severe illnesses such as severe acute respiratory syndrome, kidney failure and even death (CDC, 2020).

The COVID-19 outbreak spanning the globe, and the World Health Organization (WHO) on January 20 2020, declared the outbreak a Public Health Emergency of International Concern (PHEIC). WHO then launched Strategic Preparedness and Response Plan to support all countries to prepare for and respond to COVID-19 (WHO, 2020). Soon enough, on March 11 2020, WHO Director-General characterised the rapidly spreading COVID-19 as a Pandemic, acknowledging that the virus had reached 114 countries, with over 118000 cases and 4291 deaths worldwide (WHO,2020). In response to this critical situation, WHO together with the UN Foundation and partners, launched the COVID-19 Solidarity Response Fund to help countries respond to the COVID-19 pandemic (WHO, 2020).

Malaysian Scenario

As COVID-19 surged across Asia, Malaysia was the most affected country that owned the highest number of COVID-19 cases in South-East Asia (WHO, 2020). As of June 16 2020, cumulatively there were 553 confirmed COVID-19 cases in Malaysia – out of which Selangor had the highest prevalence of COVID-19 with 144 cases; and 12 cases being treated at the Intensive Care Unit (ICU) (MOH, 2020). The Ministry of Health (MOH) then declared Malaysia had entered the third phase of outbreak – late containment phase and immediately, the Prime Minister of Malaysia ordered the implementation of the Movement Control Order, to be enforced under the Prevention and Control of Infectious Diseases Act 1988 (Act 342) and the Police Act 1967 (Act 344) (PMO, 2020). The Government of Malaysia alongside the MOH also implemented other public health measures to prevent further spread of the COVID-19, such as free Covid-19 screening, contact tracing, testing of samples, isolation care for infected patients, mobilisation of resources where needed, providing educational infographics and media contents, raising public awareness and providing financial supports (MOH, 2020).

Never have we seen an infection that brought such intense fear to the whole full world. This is a long war, and to win the war, stay committed to strategies is crucial. In other words, citizens' compliance with preventive measures is vital to stop the spread of COVID-19 in Malaysia. Consequently, the awareness, attitude, and behaviours of citizens (KAP) towards COVID-19 have a significant impact on the implementation of preventive measures and bridging the gap in the dissemination of health information. Previous KAP research on SARS

outbreak in 2003 indicated that awareness and attitudes among the population are significantly correlated with age and education level. (Hazreen et al., 2005). Both knowledge and attitude much reflect the population's preventive practice behaviours, which can further impede the success of preventive efforts to control diseases (Goni et al., 2019).

Due to the drastic increase in prevalence of COVID-19 infections in Malaysia. The collection of vital data is important for successful monitoring and preventive measures. To stop the massive COVID-19 outbreak in Malaysia; it is urgent to understand the level of public awareness on COVID-19 among populations in Malaysia. KAP study allows us to identify the preference of population upon obtaining health information (Hazreen et al., 2005). In general, KAP is critical when it comes to providing the required strategies to implement. Also, these will reinforce and review the steps currently available and identify practical approaches to enhance awareness, attitudes and practices on infectious diseases (Goni et al., 2019). However, there is no study conducted in Malaysia to assess the KAP of COVID-19 among the population in Selangor, Malaysia. Hence, this KAP study aims to assess knowledge, attitude and practices about prevention and control measures on COVID-19 and to explore the relationship between sociodemographic and knowledge, attitude and practices among populations in Selangor, Malaysia.

Conflicts of Interest

The author declare no conflicts of interest.

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