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## COVID-19 in gulf cooperation council countries: A critical overview

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### Abstract

The COVID situation has caused mayhem in the world since it was first reported in Wuhan City in China in December 2019. The six-member countries of the Gulf Cooperation Council (GCC) also witnessed COVID 19 pandemic at the peak in 2020 and are continuing to utilize their pandemic control measures supported by effective policy guidelines by the respective government to control the adverse situation. These countries are oil economies hence they are market economies and highly dependent on the expatriate population for rendering services in every economic sector. These countries are needed to control the severity of the pandemic and return to economic growth as soon as possible. However, while combating pandemics the GCC countries have been able to successfully control the situation to date. Though various economic and policy factors matter, it appears to consider the importance of COVID 19 management in GCC countries. This paper intends to analyze the COVID 19 situation in GCC countries through analyzing available data presented in various secondary sources.

**Keywords:** COVID 19, Public Health, Health System, Gulf Cooperation Council Countries, Health System Preparedness

### Introduction

The world is witnessing COVID-19 pandemic, every country has been affected by the mayhem of this pandemic. It also signifies the status of health services across the globe. A history of various pandemic situations can be traced out since ancient times and was documented by several historians at contemporary times (Morens *et al.*, 2021) <sup>[23]</sup>. The COVID-19 was first reported from the Wuhan of China in November 2019 and by the year's end, this coronavirus infection reached other continents and affected the population worldwide (Liu & Saif, 2020) <sup>[22]</sup>. The COVID-19 pandemic brought unprecedented challenges for the frontline health workers to curb the morbidity and mortality from coronavirus infections. At global level, governments are also facing problems in management of pandemic regulations and restrictive economic affairs. Pandemic has also exposed the capacity and preparedness of the health system of the country.

The gulf nations have also been affected from this highly contagious virus. The Gulf Cooperation Council (GCC) comprises six countries, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE). The GCC healthcare system is primarily government-driven, which also regulates and facilitates the development of its health care system. The GCC countries relied on subsidizing healthcare services. The Government shared the burden of healthcare costs and provided a subsidy of around 75% to at least its citizens. The government officials generally lack personal managerial skills which is the primary requirement in the management of the healthcare sector (Alatawi, Ahmed, Niessen, & Khan, 2019) <sup>[4]</sup>. According to a report on "Gulf Cooperation Council Health Care: Challenges and Opportunities" by Global Competitiveness Report (2020), GCC countries are unable to attract and retain specialists instead of better cash incentives. In disease control, cardiovascular and cancerous diseases are showing no sign of reducing morbidity, instead the number of cases are rising progressively. These diseases are dealt with by specialists who are mostly expatriates from different countries and too facing a shortage of such professionals (Mourshed, Hediger & Lambert, 2020) <sup>[25]</sup>

Better health indicators are the prerequisite for a well-performing healthcare delivery system in a country. The world leaders at the Sustainable Development Goal (SDG) conference in Rio, Brazil reaffirmed health as the third goal, and ensured that health is a right for everyone to have adequate and nutritional food and pledged to end hunger in their respective countries by 2030 (SDG, 2012). The life expectancy for Bahrain is 67.7, the lowest among all the GCC countries while Qatar has the highest of 74.8 for the year 2016 (WHO, 2017) <sup>[36]</sup>.

The maternal mortality rate of the country determines the important indicator of maternal death due to childbirth which is preventable and treatable (UNICEF, n.d.). Kuwait has the lowest maternal mortality rates while Oman has the highest MMR among the GCC countries (WHO, 2017) [36]. The infant mortality rate (IMR) is satisfactory for all the GCC countries which ranges from 3 for Bahrain to 5.1 for Oman in 2017.

The Healthcare system in a given region/country is directed by its healthcare policy, institutions, mechanism, personal and material infrastructure and delivery system. It has been two decades since the healthcare sector witnessed a higher growth trend to serve the demand of the increasing population mainly for senior citizens and the rising prevalence of lifestyle diseases (Ram, 2014) [29]. The top two populous GCC countries (Saudi Arabia and UAE) accounted for around 75% of the GCC healthcare market. They have a total of 80% and 77% of the hospitals and hospital beds respectively (Alpen Capital, 2020) [5]. Qatar has the highest per capita healthcare spending which is more than double the average per capita spending in GCC countries, in line with the developed world. (Al-Marri, 2019; Ardent Advisory and Accounting, 2015) [1, 10]. The contribution of government investments is three-fourth of the total healthcare spending in GCC countries. For the speedy development of the healthcare sector, GCC countries are encouraging private entities through the Public-Private Partnership (PPP) model (Ardent Advisory and Accounting, 2015) [10]. This report also identified that the private sector has a very limited role in healthcare delivery in GCC countries. However, due to the fall in oil prices, that has pressured the government to encourage more private providers in the healthcare delivery to limit government spending (Alpen Capital, 2020) [5].

It has been observed that various National Transformation Plans (NTPs) and policy programmes such as UAE Vision 2021, Qatar National Vision 2030 and Saudi Vision 2030 have advocated for long-term government strategies and expand the role of the private sector in healthcare sector (Arab Health Online, 2021). The private investments are attracted through several incentives and policies in the better interest of these private players. The healthcare sector has been identified as an important avenue for the long term plan of economic diversification. As a long term plan, it is expected to prevent the flight of its nationals abroad for medical treatment along with the attraction of foreign nationals for treatment and leisure, through the promotion of its policy of medical tourism (Qatar National Vision, 2021). The rapid growth in population and increase in the proportion of elderly population supplemented by the rise in the incidence of chronic non-communicable diseases have posed new challenges to the already fragile Health care system of the GCC countries (Mourshed, Hediger & Lambert, 2006) [24]. The COVID 19 pandemic challenges also forced GCC countries to welcome the private sector to augment its services which had already been initiated in the last decade while promoting the private healthcare market (Alatawi *et al.*, 2019) [4]. Though the private sector is widely available in the healthcare sector, they are yet to dominate the provisioning of health care services in these countries.

Following the year of pandemic 2020, Gulf Cooperation Council (GCC) countries have expected to return to full functional economies in the country which was projected to grow by 2.2% in 2021 according to the World Bank report “

COVID-19 Pandemic and road to diversification” (World Bank Report, 2021). The Gulf Cooperation Council (GCC) countries had carried out several measures for the pandemic control including containment strategy and vaccination policy. The pandemic situation is still continuing and very little research has been done in the Gulf Cooperation Council (GCC) States.

### COVID 19 in Gulf Cooperation Council Countries

COVID 19 pandemic is a very recent situation and more attention was focused on the prevention and control of the severity of the pandemic. The first discussions over the pandemic management by the GCC were published in several medical journals. The first outbreak was first recorded in early March, 2020 in Bahrain and the United Arab Emirate (UAE). The country responded immediately to control the infection rate by making large scale containment efforts.

Travel ban to the highly infected country was among the first measures adopted by gulf nations (Alandijany, Faizo, & Azhar, 2020 [3]; Ephrem, Appaaurai, & Dhanasekaran, n.d.). The Gulf nations are mostly oil-based economies and they have a higher number of immigrants, therefore, the travel ban seems a necessary measure to control the infected person to travel and bring more cases within the country (Alabdulkarim *et al.*, 2020) [2].

The World Health Organization (WHO) declared COVID-19 as a pandemic on 11<sup>th</sup> March 2020 when confirmed infections reached 114 countries worldwide (WHO, 2020a) [38]. After the first wave of COVID 19 infection worldwide, several Corona virus variants were also reported that caused more severe infections and higher mortality (WHO, 2021) [39]. This caused tremendous challenges to policy makers and medical communities as well. It was observed that many developed countries; the USA, Russia, Spain, Italy and India were severely hit by increased infection rates and mortality rates (Alandijany *et al.*, 2020) [3]. Barai's (2021) [11] study on health system preparedness has attempted to explain that the pandemic situation tests the preparedness of the health system of the country as a large population may have been affected by the pandemic situation directly or indirectly. In the current pandemic year, the factor of health system preparedness draws much attention. Those countries which have better health system preparedness have faced lesser severity from the COVID 19. Though it is a matter of ongoing research, the importance of health system preparedness and strengthening cannot be ignored (*ibid.*)

While looking into the history of Coronavirus, it was found that there are six types of coronavirus that have been identified to date that cause human diseases. Four viruses among them; 229E, OC43, NL63 and HKUI) are causing minor cold symptoms and are suppressed by their own immune response by the infected body (Su. *et al.*, 2016) [31]. Middle East Respiratory Syndrome (MERS) is a viral infectious disease caused by a coronavirus known as MERS-Corona virus (MERS-CoV). It was found for the first time in Saudi Arabia in 2012. Corona-virus disease 2019 (COVID-19) pandemic is caused by a novel coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The number of confirmed cases and the associated deaths have steadily increased since the first communication received by WHO from China in December 2019 (WHO, 2020) [37, 38]. The pandemic had variable prevalence and associated mortality in different countries of the world. The confirmed cases are found to be

varying from 5918 in Yemen to 4,666,553 in the Russian Federation in February 2020 (JHU, 2020) <sup>[12]</sup>. The epidemiological data associated with COVID 19 communicated by the individual countries to WHO does not reflect the true situation as the data repositories sent by each country are not linear and accurate due to internal politics and technological challenges as well. Further, the reason could also include the inability of the respective healthcare systems of individual countries to identify all the active cases in their jurisdiction. Contrast to the developed nations, the country that has a weaker health service system, such as Yemen, may have a large proportion of asymptomatic COVID 19 infected cases, and have limited laboratory diagnostic capacity. The recovery rate in Yemen is one of the lowest. It is as low as 38.7% while the death rate is as high as 19.2% (JHU, 2020) <sup>[12]</sup>.

However, this disease has pointed to existing healthcare policy flaws that the robust healthcare system is not sufficient for the prevention and control of pandemics. The number of COVID 19 cases and the associated deaths per unit of its population were found to be abnormally very high in some of the developed nations having advanced healthcare systems. Here, we can quote examples of the United States of America (USA), Italy, the United Kingdom and South Korea. The USA reported more than 569000 COVID 19 related deaths in its affected population. Similarly, the number of deaths for the United Kingdom is 127000, Italy's total number of COVID 19 deaths is 118000 and South Korea reported 3.1 million COVID 19 deaths so far (JHU, 2020) <sup>[12]</sup>. South Korea was the first of these countries which reported their first case and responded systematically with proper guidelines including norms of social distancing, use of masks, early testing, diagnosis and effective treatment, isolation and quarantine norms. The early intervention measures proved effective in early prevention and control.

### Healthcare management during COVID 19 pandemic in GCC Countries

It was nearly impossible to secure a country free of Coronavirus in the times of a highly globalized world. Medical fraternities and policy makers of each COVID 19 affected country, even in developed countries, made every effort to control the rapid infection rate in their countries (WHO, 2021) <sup>[39]</sup>. Despite every effort, Italy, Spain, the USA, Brazil, UK and now India are witnessing a very serious COVID 19 pandemic situation. The GCC countries

are the hub of various commercial establishments that employ employees of many countries. Gulf countries are oil-exporting nations and thus many business conglomerates of the globe are regular visitors of these nations. Mecca, being one of holiest places for the Muslims and thus the congregation of annual pilgrimage, can become threatened by large community infections. In the course of epidemic control and public health management, the GCC countries initiated a series of protective measures to halt the disease progression in the community. Travel restrictions to the affected countries was the foremost measure, firstly initiated by Saudi Arabia and is among the GCC in March 2020. Further, mosques and other religious institutions were closed and provisioning was restricted in the shopping malls, recreation facilities and restaurants. Curfew and lockdown had been imposed in many major cities such as Mecca, Medina, Riyadh and Jeddah (Saudi Press Agency, 2021; Al- Tawfiq & Memish, 2020) <sup>[7]</sup>. Next to Saudi Arabia, Kuwait had banned all international flights from COVID 19 affected countries along with universities and religious places closure for the public gathering (Kuwait Times, 2020) <sup>[21]</sup>. The United Arab Emirates also imposed an international travel ban on its citizens in April 2020 (National Emergency Crisis and Disaster Management Authority UAE, 2021). The Kingdom of Bahrain also imposed a travel ban to Iraq and Lebanon in April 2020 which were facing COVID 19 crisis in their country (Gulf News, 2020).

Various other efforts also had been initiated to curb the Coronavirus infection in the GCC countries. The timely detection of the possible infected case was one of the earliest COVID 19 control measures adopted by these countries. The United Arab Emirates launched drive-through testing facilities to minimize physical contact with possible infected individuals. Al Ain hospital converted to full capacity COVID 19 dedicated hospital for the citizens to ensure better treatment facilities with highly managed safety guidelines. Saudi Arabia launched Virtual clinics at King Abdullah Medical City, Mecca for the possible infected individuals who could benefit from monitoring symptoms and medication prescribed by the dedicated doctors (National Emergency Crisis and Disaster Management Authority UAE, 2021). Oman also sought public support for managing COVID 19 restrictions and maintaining containment facilities from the volunteers (Times of Oman, 2021) <sup>[32]</sup>

**Table 1:** COVID 19 statistics - GCC countries (WHO, 2021)

Country	Total Population	Total Cases	Cases per Million	Tests per Million	Total Deaths	Deaths Per Million
Bahrain	1,735,110	99 456	5 8449	1,540,827	367	216
Kuwait	4,306,871	160 901	3 7677	348,493	952	223
Oman	5,180,743	132 486	25944	170500	1517	297
Qatar	2,807,805	148772	51638	489508	248	86
Saudi Arabia	35,125,331	366185	10518	346574	6350	182
United Arab Emirates	9,959,203	274 376	27742	2,514,414	783	79
GCC Total	59115063	517841	211968	5410316	10217	1083

Source: WHO COVID 19 Situation Report-27 January 2021: The GCC Countries with comparative analysis

**Table 2:** COVID 19 statistics Overall Comparison between GCC and 3 highest case countries (WHO, 2021) <sup>[39]</sup>

Country	Total Population	Total Cases	Cases per Million	Tests per Million	Total Deaths	Deaths Per Million
GCC	59115063	517841	211968	5410316	10217	1083
USA	332,124,463	24604325	74333	922703	410667	1241
India	1,387,827,050	10654533	772.1	140,566	153 339	111
Brazil	213,432,042	8875392	4 1183	134,000	215 243	1013

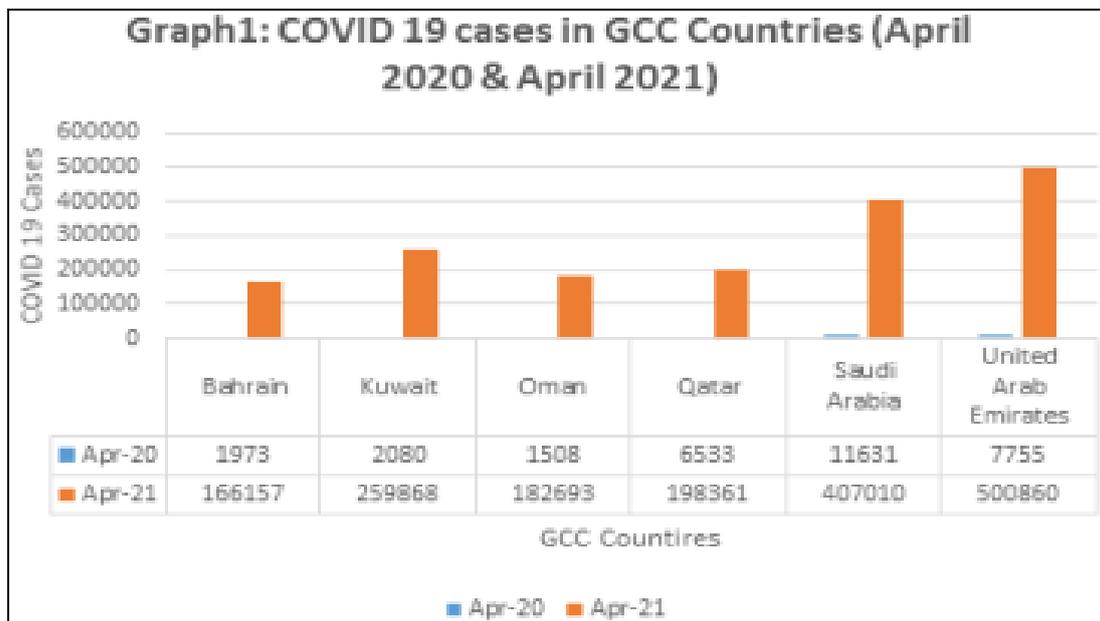
Source: WHO COVID 19 Situation Report-27 January 2021: The GCC Countries with comparative analysis.

A similar type of control measures was taken by other GCC countries as well in subsequent phases. Timely implementation and strict policy decisions by the government and health officials have generally succeeded in bringing down the cases of COVID infections cases and death and controlling the outbreak in their respective nations (Alandijany *et al.*, 2020) [3]. It was evident that the GCC countries managed to curb more COVID 19 casualties as a comparison to other most affected countries; the USA, Brazil, India and China (Table 2)

**Findings & Analysis**

This section intends to discuss COVID 19 infection and prevalence, evident from the data that are available online from the secondary literature resources. For research, the

time period of the COVID 19 infection cases in each GCC country has been opted from the declaration of a pandemic by WHO (reference date- 11 March 2020 to April 2021). While viewing Figure 1, the cumulative cases have shown exactly after a gap of one year. It shows how COVID 19 cases rise exponentially. However, there are several factors associated with COVID 19 management in each country. It was found that each GCC country tackled the pandemic situation differently despite having obstacles. The United Arab Emirates and Saudi Arabia have the maximum cases in April 2020 and April 2021. Oman registered the lowest cases in April 2020, but in April 2021 Bahrain recorded fewer cases of COVID 19 in April 2021. It reflects the better pandemic control in Bahrain since the pandemic arrived in the country.



**Fig 1:** COVID 19 cases in GCC Countries (Adapted from Worldometer, 2021)

The United Arab Emirates has a population of 9,959,203 (World Population Review, 2021) and reported 500860 number of COVID 19 cases up to 21<sup>st</sup> April 2021. A total of 1559 COVID 19 positive are reported dead. 485078 people recovered so far and their recovery rate was as high as 96.5% and case fatality was 0.3%. Such impressive data reflects that UAE took extraordinary measures to find the infected persons through vigorous testing measures including RT-PCR and Rapid Action Tests (RAT). In other words, more than 2.5 million tests were carried out for a million of its population. The vigorous exercise of COVID 19 testing enabled the identification of the majority of the infected cases in a given time. The ratio of the mortality associated with COVID 19 and the number of samples testing positive in UAE is the second-lowest among the GCC countries after Qatar. The vaccination programme in UAE was initiated in November 2020 even at the trial stage. The mass vaccination drive will start in February 2021 and it has been made available to the residents and citizens of UAE (Worldometer, 2021) [45].

Saudi Arabia reported the maximum number of deaths among the GCC countries. It has a population of more than 35 million and has reported about 407010 COVID 19 cases. There have been 391362 infected patients recovered so far and the recovery rate was found to be around

95.9%. However, the case fatality rate is 1.7% which is not a good sign in terms of the COVID 19 fatality rate in Saudi Arabia as compared to other GCC countries (Worldometer, 2021c). The rate of testing is lower than the second-highest number of sample examinations, due to its higher population in comparison to other GCC countries. It reported a total of 6846 deaths. Saudi Arabia suspended the Umrah pilgrimage in 2020 to curb the infection rate at the peak of the COVID 19 pandemic situation in 2020 (US News, 2020). However, in 2021 this religious event has been organised but with better pandemic management measures which cut short the number of visiting pilgrims and COVID test reports, appropriate physical distancing, compulsory use of face masks.

Kuwait has a population of more than 4.3 million and reported a total of about 259868 COVID 19 cases, of which 1648 people died due to COVID related complications. The testing rate is about 3.5 lakh per million of its population (Worldometer, 2021a) [41]. The vaccination program in Kuwait started in December only along with all other GCC countries. Bahrain has a population of about 1.74 million and reported 166157 of COVID 19 cases and total death cases were 607 at the current date. The case fatality rate is 0.4% which reflects the fact that Bahrain has a better health system and health system preparedness. Around 155, 768 infected cases have been recovered so far, so the recovery

rate is 93.2% which is remarkable (Worldometer, 2021b)<sup>[47]</sup>. Bahrain has approved the Chinese vaccine Sinopharm for the mass vaccination program in December 2020. The state-sponsored vaccination was made free to all citizens and residents above 18 years of age.

Oman has a population of about 5.2 million. It reported about 183770 number of COVID 19 cases and deaths in 1926. The recovery rate was around 89% and there was a 1.0% fatality rate. It was observed that the rate of testing is lowest among the GCC countries. Oman has started the COVID vaccination programme for senior citizens aged over 65 years with the Oxford-AstraZeneca vaccine since February 2021 (Worldometer, 2021d)<sup>[49]</sup>.

Qatar has a population of 2807805. It reported a total of 199180 cases of COVID and 400 deaths. The case fatality is 0.2% while the recovery rate is 88.5% of the total cases. Qatar has tested the number of samples as half of its population in approximation. It reported a total of 248 COVID 19 related (Worldometer, 2021e)<sup>[50]</sup>. The mortality to the recovery ratio is lowest in Qatar which is largely due to better healthcare facilities and provisions for COVID 19 patients. Qatar has been organizing the football world cup in 2020 and they are speculating more positive approaches to conduct this world cup without the fear of COVID 19 infections. A report in the daily quotes Yasir al- Jamal, Chairman of the Operations Office of Qatar's Supreme Committee that despite the pandemic situation, they are hopeful for organizing FIFA world cup 2022 in full seat occupancy in stadiums. However, the country has witnessed an increased infection rate since January 2021 which seems to be controlled by providing mass testing and better hospital care facilities (France 24, 2021).

#### **Covid- 19 Situation: A Comparison with other countries**

A comparison of various indicators of the prevalence and proactive actions by the GCC countries with some of the countries which are heterogeneous in terms of their economy and the existing healthcare system will provide a broader overview of the comparative performance. The USA recorded an enormous number of cases, around 75000 cases per million of its population in 2020. It has a population of more than 332 million, of which it recorded 31.9 million cases of COVID 19 at the current date. It has tested almost the same number of samples as that of its 90% population. It has recorded about 569000 deaths, which are approximately 1800 deaths per million of its population. The epidemiological figures are worrisome concerning the number of recorded cases and the number of deaths. The mortality rate is around 1.6% of the recorded cases which is slightly lower than the associated rate of global mortality (Fink, 2020)<sup>[16]</sup>.

India has the second-highest population in the world which roughly equals 1388 million in number. It has recorded around 11 million cases of COVID 19, a prevalence of 7721 per million of its population. Though it has tested a huge number of samples and testing rate is lower, owing to its huge population. It recorded a total of about 1.54 lakh deaths, which equals 111 deaths per million of its population (Murhekar *et al.*, 2020)<sup>[26]</sup>. Similarly, Brazil, a developing country with a relatively underdeveloped healthcare system has experienced the worst of this disease. It has a population of about 213.5 million and recorded about 8.8 million cases. On average, the prevalence is roughly 41183 cases per million of its population. It

recorded more than 2.15 lakh deaths, which roughly equals 1013 deaths per million of its population (De'Souza *et al.*, 2020)<sup>[14]</sup>. There are differences in the extent of actions taken by the individual GCC countries but the basket of actions related to the reduction of COVID 19 prevalence, its prevention and control & diagnosis and treatment remained largely similar. To maintain a balance between the economic development viz-a-viz prevention and control of COVID 19, minimum restrictions were enforced for social distancing measures; however wearing masks were made mandatory in all the GCC countries. The extent of public restrictions was determined by the extent of prevalence which varied over some time. Restrictions were enforced on air travel "from and to" where the virus was having a relatively higher prevalence. The restrictions were enforced for different European countries, the USA, India, China, Japan and others.

The rising demand and growth in health expenditure are driven by exponential growth in population, a spike in the prevalence of lifestyle diseases and an increase in the proportion of the elderly population. Moreover, the GCC countries are striving hard to ensure equity and equality in access to healthcare services. The COVID 19 pandemic brought the litmus test for all functional health systems across the nation. It is also important to understand contemporary issues such as loss of oil revenues in gulf nations for a few years. The oil revenue loss caused a strain on the public finances for the respective government of the GCC member countries (World Economic Forum, 2021)<sup>[35]</sup>. GCC countries are incurring a large portion of the public expenditure for public health, simultaneously, promoting private investments to fill the vacuum created by the increasing demand for quality healthcare.

However, there is a large scope of improvement in the healthcare delivery system in GCC countries. The following points provide insights on the scope of favorable healthcare investment,

- The demand for GCC healthcare services is gradually rising, owing to its immense population growth, increasing elderly population and the disproportionately higher incidence and prevalence of non-communicable diseases (NCDs) (Ram, 2014)<sup>[29]</sup>
- The demand for healthcare services will immensely rise following the successful containment or control of the COVID 19 (Altios, 2020)<sup>[6]</sup>.
- Healthcare costs are rising at an unprecedented rate which is due to the lack of special treatment and quality of healthcare services below the expectations of its residents. Instead, the healthcare services are provided free of cost to all residents. Most of its nationals prefer the treatment of specialty care abroad, for which the treatment costs are incurred by the concerned healthcare authorities.
- Promotions of a sustainable economic model that are based on providing services (healthcare, education and research services) rather than the current oil economy which is resource-limited and not sustainable for very long.

This is the first time in human history that several COVID 19 vaccines have been developed and approved for emergency use for the general public in less than one and a quarter years. Despite criticism, vaccination programmes are implemented in the majority of the countries across the

globe. The GCC countries have procured vaccines and are implementing vaccination programmes in a phased manner. As discussed, the COVID 19 infectious disease has taken a toll on more than a million lives. These emerging diseases have posed fresh challenges which guide us to revisit the policy for reducing the impact of emerging communicable diseases. Along with the adoption of modern technology for medical sciences, we must focus on preventive aspects. The most popular phrase of all the time “prevention is better than cure” has augmented the importance of prevention concerning communicable diseases, after the ongoing pandemic of COVID 19.

Before COVID 19 pandemic, the burden of diseases in the high-income countries of the world had been shifted from communicable diseases to NCDs (WHO, 2017) [36]. However, this pandemic situation has now opened new challenges for the control of infectious viral diseases. The dangerous viral epidemic demand focused healthcare delivery from preventions to the treatment of infectious diseases and most importantly the responsive governance that helps in finance and management of better health care management in the country.

The GCC has attained significant social and economic achievements in a very short period of time. This region not only increased their economic capacities and increased the market mechanism in another form of development but also promoted health policies. However, these policies are mainly encircled to promote curative care rather than putting more emphasis on protective and preventive measures. The role of medical education in gulf countries is very less explored in any available literature data which itself raises a concern about the balanced health care system. The Gulf countries witnessed rapid modernization which led to creating a myriad of both mental and physical diseases as a result of unhealthy and sedentary lifestyles. The lifestyle disease such as obesity, often associated with the national population appears as an epidemic because most of the GCC countries report an increased case of obese people. The health system lacks native human resources in the medical sector.

### Conclusion

Each of the GCC countries responded aggressively to controlling the COVID pandemic. It was discussed in the above section that many commercial establishments, factories, offices etc. have been closed for several months and forced labour migrants to leave their respective countries. Due to closure of all this, the GCC countries are facing a fragile financial situation recently. The health system preparedness, better health service system, and determined policy decisions are some of the factors that could support these six Gulf countries to contain the effects of a pandemic to the lower level. Moreover, it cannot be denied that these countries are also economically affluent so that the finance issues were less reported and the population had not suffered as compared to other developing countries. Overall, the COVID 19 status in the GCC countries has been under control as of April 2021 as compared to the last year 2000 when most parts of the world witnessed an infection surge in the later year of 2000. The GCC countries utilized their health services resources, both public and private providers, in the management of the COVID 19 pandemic in their countries. These continuing efforts, quick and appropriate decisions, cooperation with the public etc.

have played an important role in limiting further infections. However, the recent second wave of the COVID 19 infections with mutant variations are making new challenges in combating diseases. There is no evidence of a subsequent increase of COVID 19 waves in GCC countries reported till April 2021. As many other countries including the UK (second wave in December 2020-January 2021) and currently India are witnessing a catastrophic second wave of COVID 19 infections appear threatening to the GCC countries. Therefore, there is a need for continuous monitoring, updated COVID 19 information management, mass testing and complete vaccination are some of the major steps to be taken by GCC countries to control the COVID 19 pandemic in coming times.

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