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# Impact of corona virus crisis management among Libyan population

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**Abstract**--COVID-19 is one of the most dangerous chemicals to human health everywhere on the planet. Arab countries are statistically rated fourth after the United States, Brazil, and Russia in COVID-19 cases. In Libya, there have been little research on the influence of immigrants and military conflict on the spread of infectious diseases. As a result, there is a pressing need to better understand disease behavior, as well as how to prevent recurrence and implement control measures among Libyans. In the instance of Corona, improbability is produced by a lack of awareness, unspecific symptoms, and a lack of viable methods to combat the epidemic due to the absence of a viable means to combat the epidemic immunization and effective medication. Exploratory scenarios can provide scientific strategic advice to policy processes in this state of basic ambiguity, allowing them to be better prepared. COVID-19 spread, treatment, and prevention pose serious issues for government and healthcare professionals. The rapid spread of the COVID-19 contagious disease from the first to fourth waves has created a threat to world peace, which has modelled mental health and global crisis management difficulties. The goal of this study to emphasize the principal concern and repercussions of COVID infection in the Libyan population, as well as the prospects for crisis management in comparison to other impacted countries from its beginning till now.

**Keywords**--Corona virus crisis, Management Opportunities, Libya.

**Introduction**

Severe acute respiratory syndrome-coronavirus (SARS-CoV) and middleeast respiratory syndrome-coronavirus (MERS-CoV), both of which are comparable to the novel CoV, cause respiratory tract illnesses. **(1, 2)**. Corona Virus Disease (COVID-19) is a rapidly spreading infectious disease that has been declared a pandemic by the World Health Organization. No location can be considered safe **(3)**.

Despite the fact that WHO has outlined such strategies, they are difficult to implement and execute in crisis zones around the world, such as Libya (4). The provision of basic and emergency services to Libyan civilians is extremely difficult. The influx of immigrants and fighting militias from around the world has added to the country's traceability and control of new infectious diseases (5). In addition, **Xu et al. (6)** revealed that patients from Egypt, Tunisia, Saudi Arabia, and Italy, where corona virus infection had been formally documented and was spreading rapidly. This could help raise the number of suspected COVID cases among Libyans.

The global health emergency has put a strain on universal healthcare systems around the world, and governments are under pressure to update their systems so that patients can get healthcare (7). The effects of COVID-19 on psychiatric illnesses and mental activity have not been extensively studied; nevertheless, health professionals believe that the coronavirus may have widespread impacts, and social support is cooperative in the crisis, based mostly on public reaction and situations (8). However, now that what appeared to be an unpleasant visitor has turned out to be a long-term travelling companion, it is evident that we cannot just return to the armory of acute crisis management. The current study aimed to understand how to arrangement with and avoid COVID-19 adverse concerns in the absence of a vaccine and clarifies the role of various potential public health measures to diminish the transmission of the COVID-19 and examines how taking a service ecosystem approach might help you understand the complexities of healthcare systems during COVID-19 crisis management.

#### **Epidemiology of infected cases with corona virus infection:**

COVID-19 greatly pressurized the health care system due to the high numbers of cases and deaths in many countries (7). **Alwahaibi et al. (8)** revealed the average age of suspected cases with corona virus infection virus was 29 among Libyan people. They reported high number of confirmed COVID-19 cases in all Arab countries including Saudi Arabia followed by Qatar, UAE, Kuwait , Egypt, Yemen, Libya and Syria. In a study reported by **Daw (5)** who revealed that the median age of the suspected cases was 56 years and 75% of them were men. On admission, most patients had fever and/or dry cough. Other different symptoms were also reported including chest pain, headache, confusion, diarrhea and constant pain. Hematological and biochemical marker including lymphopenia and elevated lactate dehydrogenase in 75% of patients. Lower level of Platelets in 75% of patients. Patients had a degrees of liver function abnormality with raising level of alanine aminotransferase (ALT) & aspartate aminotransferase (AST). In chest x-ray and CT, 75% of patients showed bilateral pneumonia with 38% of patients showing unilateral pneumonia. About 25% of patients showed multiple mottling and ground glass opacity.

During approaches to reduce the spread of COVID-19 such as the lockdown of cities, full suspension of flights, school and university closure, provision of free-of-charge health care to all patients, and launching of COVID-19 active screening in the highly infected areas (10). In addition, **Khlaif et al. (11)** explored the challenges of Emergency Remote Teaching (ERT) during the COVID-19 crisis in developing countries as Libya. A qualitative approach was adopted to

achieve this aim. Moving suddenly from face-to-face teaching to ERT complicated and disrupted the educational system in these countries, which had already been affected by violence and unstable policy, as well as the weaknesses of the infrastructure and the bad economic situation. They found the concept of digital inequity and digital ethics are still very limited, underrated, and unclear in some countries as Libya.

### **Opportunities of Crisis management:**

A crisis is defined as "a physical disruption that impacts an entire system and threatens its underlying assumptions, subjective sense of existential core." The resilience literature explores how systems, organisations, and people respond, recover, and adapt in the face of adversity. These ecosystem agents can be active or passive, introducing and using various sorts of resources to generate value for themselves and other ecosystem actors. A strong healthcare system with active actor cooperation at the individual, organisational, and government levels is required for an effective response to the COVID-19 issue **(7)**.

All Arab countries operated real time polymerase chain reaction (Real-time PCR) as the testing method for SARS-CoV. Results are obtained in about 5 hours following nasal and nasopharyngeal swabs **(9)**. **Xu et al., (6)** reported that all patients were treated in isolation and received antiviral, antimicrobial and supportive treatment according to the International standards. Although most vaccines are expected to be reasonably effective in avoiding serious disease and death with boosters, they may not totally prevent infections from spreading, immunity may wane, and new variations may evolve that evade vaccine immunity. As a result, COVID-19 measures are still in effect in a number of nations. It's critical to establish a longer-term strategy **(12)**. Currently, non-pharmaceutical interventions are valuable and propose to suppress exposure of COVID-19 virus, thereby hindering the spread of virus to minimize further complications as depressive moods, anxieties and other associated health issues **(13)**.

The first feasible fundamental strategy focuses mostly on limiting the transmission process; nonetheless, it does not significantly prevent a surge in the ongoing COVID-19 epidemic. This mitigation method aids in reducing the peak problem of infected patients' healthcare needs and allows for the treatment of sick-critical patients at higher risk of virus sickness **(14)**. To effectively sustain the situation, the second feasible basic strategy was to either reduce the frequency of hospital admissions or reduce the spread of illness. Every policy has its own set of difficulties **(15)**. So, combining home quarantining of suspicious cases with maintaining the social isolation of older persons, suspected cases, and those at high risk of infection might cut peak healthcare demand by two-thirds. **(7)**.

For anyone seeking health-related information concerning the COVID-19 pandemic, social media has supplied a lot of up-to-date information **(16)**. People have been subjected to severe stress and health risks as a result of COVID-19, which has boosted social media use as people seek correct health-related information and stay in touch with friends **(17)**. Beyond individual messages,

public communication seeks correct information and the full potential of the COVID-19 data to establish a true feeling of viral protection **(18)**.

As a result of the COVID-19 incident, life patterns have changed in response to preventive actions. **(19)**. The continuous global health crisis has instilled a sense of contagious illness prevention and promoted health behaviour adjustments such as maintaining social distance, using hand sanitizer, wearing masks, and hand washing. This health behaviour strategy clarifies the health behaviour model, which outlines why people fail to use preventive measures and screening tests to detect infectious disease quickly and early.**(20)**. Thus, health behavior model Libyan population helps to understand the useful strategies to improve the good progress people's health behavior adherence to medical treatment against the COVID-19 disease.

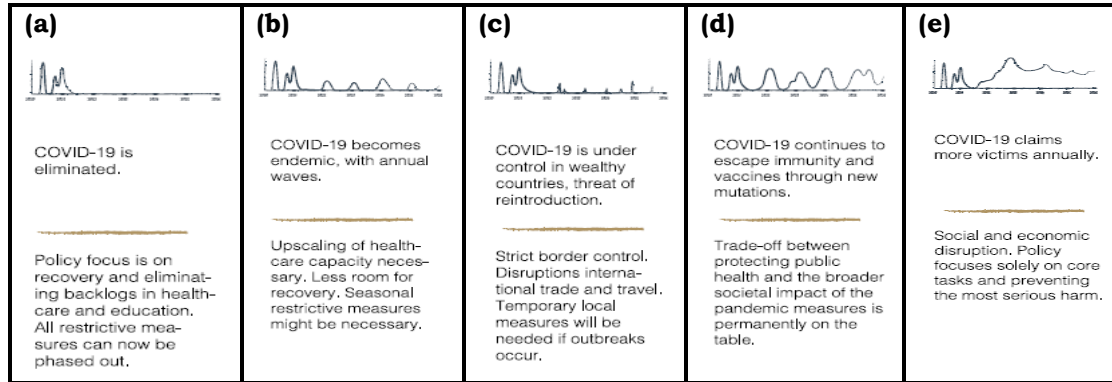
### **Fundamental uncertainty and Modulation:**

There is a great deal of uncertainty about how the pandemic will develop. According to virologists and epidemiologists around the world, the pandemic's future path and timeline are unknown. They anticipate the virus will become endemic at some point, but it's difficult to predict when **(21)**. It's unclear how many infection surges and new troubling varieties global society will have to deal with as it heads toward a possible endemic condition?. It's possible that things will grow worse before they get better for good **(22)**.

Despite the widespread use of science in COVID-19 policymaking public understanding of the virus's unpredictable growth has had a tough time finding its way into policymaking and the public discourse **(23)**. There were five exploratory consequences to model the pandemic's long-term evolution from an epidemiological, virological, and broader societal standpoint. Immunity, vaccination, mutations, and human behaviour are four driving forces that are both crucial and unclear in these settings. The situations include (a) normality, (b) flu, (c) external threat, (d) constant struggle, and (e) worst-case setting **(Table 1)**. Working with situations is essential for effective public communication and provides direction for anticipating the various possible outcomes of the pandemic's progress **(24)**.

These predictions are based mostly on scientific findings from the fields of virology and epidemiology, but they have been broadened through discussions with experts from a wide range of disciplines and policymakers, as well as an extended by obtaining expert viewpoints on reoccurring themes as health and health care, the economy, job and human rights **(25)**.

Table (1): An exploratory consequences of COVID-19 and its societal implications:



Scenarios must not simply be a paper exercise to be effective; they must exist in the thoughts of decision makers and the general public. It must depend on a variety of groups (ministries, local health authorities, sport organizations) that help to detect potential future difficulties for society and policy in different countries (26). The government and parliament utilise the scenarios to propose COVID-19's long-term strategy and related national policies in other societal spheres (27).

Concerning worst case Scenario, COVID-19 continues to pose a major hazard. Vaccines aren't enough working, and new variations are emerging, with at least some of them resistant to existing vaccines. Policymakers must make difficult trade-offs between acute COVID care and prevention (28). Because of the Omicron variant's transmissibility and the present vaccines' ineffectiveness, eradication of the virus and a complete "return to normal" as it was previously thought to be exceedingly unlikely. This necessitates a long-term plan rather than crisis management on a wave-by-wave basis (24).

### Service ecosystems in health care

For the coronavirus crisis, there are three tiers of healthcare service ecosystem: **(Figure 1): (a)** Individual actors at the micro-level that including clinicians and patients working organized with nurses and allied health professionals; **(b)** Inter-organizational group of actors at the meso-level as hospitals, clinics and local healthcare support agencies; **(c)** Government actors at a macro level including government agencies and healthcare authorities) (25). During the coronavirus outbreak, a framework for health care and well-being was developed. Three processes are included in the framework which are moving from a starting point to a better ecosystem state; the process that drives ecosystem practices; and the process that moderates ecosystem practices (26).

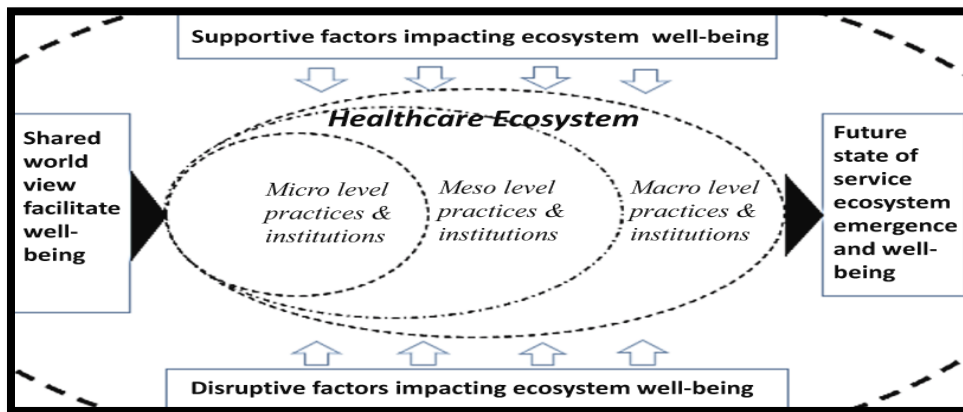


Figure (1): Health care and well-being during the coronavirus crisis.

A unified mentality on "controlled risk" might encourage political leaders and important decision-makers to discuss and communicate quantified risks and probabilities. Medical knowledge and techniques such as contact tracing programmes have enabled determining the risk of catching the virus and controlling its spread in the community practicable. These common habits are strengthened by digital and technical advancements, which might aid in the embedding of a common understanding to integrate daily demands (27). Public communication and other widely disseminated social media tools also allow people to share their experiences and spread shared practises that have an impact on ecosystem health. However, there are obstacles to overcome when it comes to getting the execution properly (25).

So, the global COVID-19 dilemma illustrates the need for a rethinking of "critical services" in order to better control the disruptive elements affecting ecosystem health. These services can be combined to form a more efficient and integrated service system. As a result, recurring interactions between multiple actors involve processes of sensing and learning in order to build synergy, allowing the ecosystem to learn from knowledge, adapt, respond, and demonstrate resilience (28).

### Recommendations

For start, this is critical for effective public communication. For example, if short-term promises ('just one more wave' or 'once we're all vaccinated, we can go back to normal') are repeatedly broken, this can lead to pandemic fatigue, a loss of trust in society, and a decreased willingness to follow contact-restricting measures and, potentially, to be vaccinated or revaccinated in the future if necessary (29,30).

Governments should consider and plan for the most critical vulnerabilities and requirements in each scenario. Some of them can be categorised as no-regret options that should always be implemented before it is known which scenario would unfold. One of the most important requirements is a long-term vaccination strategy for the entire world. Ad hoc one-time vaccine donations may be

appropriate for acute crisis management, but worldwide immunisation, which should be repeating if possible, necessitates more structural approaches **(31)**. Second, governments must analyse the long-term viability of general social distancing. As a result, a thorough examination based on ethics and behavioural sciences before imposing new measures that could become the "new normal," further research is required **(32)**. Therefore, Libyan people started to be involved in health-related behavior when people perceive susceptibility to a contagious disease, which has severe health consequences.

Third, a long-term strategy must always include safeguarding and developing the health-care system's and society's overall resilience. It is possible to take important actions ahead of time to ensure that society as a whole is capable of coping with long-term shocks **(31)**. Additionally, assessment, policy development, and assurance are the three basic public health functions **(Figure 2)**. Public health organizations focused their resources on investigating and managing epidemics as quickly as possible **(34)**.

<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Participate in contact tracing activities</li> <li>• Establish and assess temporary sheltering facilities</li> <li>• Modify food safety assessments relevant to food supply chain modifications (e.g., take away and food delivery handling)</li> <li>• Assess conditions in public spaces, public facilities, and sports and leisure facilities</li> <li>• Conduct border screening and assessments</li> <li>• Conduct workplace risk assessments</li> </ul>
<b>Policy Development</b>	<ul style="list-style-type: none"> <li>• Provide public communications and or advice about pandemic-specific food safety issues (e.g., risk of transmission on food packaging)</li> <li>• Provide support to local businesses related to food safety measure implementation</li> <li>• Provide workplace training on COVID-19 risk factors and controls</li> <li>• Review contingency plans for public spaces, public facilities, and sports and leisure facilities</li> </ul>
<b>Assurance</b>	<ul style="list-style-type: none"> <li>• Monitor compliance with social distancing measures</li> <li>• Monitor environmental health and safety in temporary sheltering facilities</li> <li>• Monitor environmental health and safety in elderly homes</li> <li>• Monitor environmental health and safety of reopened facilities</li> <li>• Participate in food distribution schemes</li> <li>• Enforce domestic noise and anti-social behavior ordinances</li> <li>• Address illegal dumping of commercial waste</li> </ul>

Figure (2) : Three public health function for COVID-19 crisis management

Finally, strengthening the evidence base for better pandemic prevention, anticipation, and response requires encouraging biomedical, public health, and social scientific research, as well as global public data sharing and knowledge synthesis **(33)**. According to the United Nations, the ongoing climatic crises are the result of humanity exerting too much pressure on the natural environment, which has had negative consequences **(28)**. So, complex solutions are needed to concrete good well-being and overcome undesirable outcomes in highly ambiguous crises with extensive effects, which are best carried out when the multilevel system is self-adjusting and continuously reinforcing **(25)**.

## Conclusion

The fight against COVID-19 involves a combination of care based on scientific evidence, public health, information sharing and sound policy. Effective management has a pivotal role in caring for patients with COVID-19.

The current study endorsed that the effectiveness of multiple interventions or mixed precautionary events to restrict the transmission of the COVID-19 disease and useful to achieve a significant impact on sustaining and controlling the disease. Ecosystem practises are driven by resources effectively coordinated in a responsive institutional environment to cocreate positive well-being and counteract negative results.

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