

‘Lessons from the Front-Line’ Facing the COVID-19 Pandemic

Learning: Readiness, Preparedness, Reacting, Mitigating, Resolving, Tolerating, Realising and Reshaping

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Abstract

There has been great learning accumulated within the national and the international healthcare workers and COVID-19 pandemic risk mitigation professionals that are at the front line, facing the disease from different positions and at throughout its various stages. This paper aims to explore the type of learning and knowledge assets from all the multidiscipline perspectives through the observations capture by the front liners. The context deployed in this paper led to selecting different disciplines at the front-line with the pandemic in the WHO-EMRO region.

While there have been many publications relevant to the different experiences faced by the healthcare staff with the disease, the implication of this study is that it provides a holistic approach of the type of accumulated learning that could be achieved if all the disciplines involved integrate their knowledge, share it and then re-capture it in one setting in the form of guidelines or protocols.

Many of the learning could be a source for future initiatives and projects that would lead to strengthening the preparedness of the health systems, both regionally and globally. A framework is suggested for future collection of the lesson learned by the front line

stakeholders to ensure the flow of the knowledge within the community at the right time. Limitations of the paper are discussed along with recommendations for further studies. The paper could be an excellent reference to WHO and public health authorities practices and performance review in relevant to the COVID-9 or similar public emergencies.

Keywords: COVID-19, Lessons Learned, Front-Line, Pandemic, Healthcare System Preparedness, Knowledge Sharing, Learning, Multi-disciplinary Approaches.

1. Introduction

The COVID-19 pandemic has rapidly disrupted the health systems all over the world, and led to the accumulation of many stories that can be narrated for many years to come from those in the front line who experienced the fierce disease. Those at the front lines came not only the healthcare specialities, but from other specialities that helped to protect, or mitigate the community from the risks of this contagious pandemic, Favini (2020). However, from the other perspective, COVID-19 brought also with it lots of potential learning that can make a difference to many future planners, and government decision-makers. These lessons also could be realised through protocols and guidelines produced by leading public health organisations like WHO or local authorities and could help other countries to behave better system to be more robust from this pandemic or similar crisis in the future. Buheji (2020a), Del Rio and Malani (2020).

Both the literature review and the qualitative data collected from the experts' panel, in the case study, focused on the importance of readiness and preparedness in different levels and areas and how to carry this experience along within any possible next wave, or while managing the current pandemic spillovers on the quality of life.

All the experts showed the importance of being resilient similar to the previous pandemics that passed. Both short and long term lessons and solutions are extracted from a panel of the experts which could help to shape future global and regional public health guidelines similar to the development of the WHO's 'One Health Approach'. More reviews and observations also address how to manage the COVID-19 in the new normal world, or how to stretch the capacity of the public health while ensuring a high level of transparency during pandemics. Edgecliffe-Johnson and Kuchler (2020).

The panel of experts agreed on further development and more in-depth training on the infection control as a means for mitigating the risks of the COVID-19 and similar contagious diseases, Sim (2020). The accumulated experiences among the experts support the preparation for the stage of learning to live with the virus while staying positive and developing unique team spirit that fulfils the health needs and motivates innovative solutions.

One of the main repeated lessons from the front line is the wellness program. This program supports the holistic approaches starting from improvement of what to eat to the mental health prevention practices. The experiences of EMRO Region are also reviewed here, with a focus on the possible pandemic strategies that would help the front line efforts. Del Rio and

Malani (2020).

The paper emphasises that the primary protection for the front line workers can extend by the effective management of the borders and the airports, till enhancing the efforts of the public health that would lead to breaking the chain of the COVID-19 transmissions, so that the health services would always be having the capacity manage critical cases effectively. Favini (2020)

The experts shared their concern about how to transfer this accumulated knowledge and extraction of lessons learned from the front line to the most vulnerable, including public health services in Africa. Edgecliffe-Johnson and Kuchler (2020).

This research also extracted the main positive learning by the front line experts during the COVID-19 pandemic and showed engagement of the community would help of gradual re-opening despite the presence of the risks of the virus and no vaccination solution so far. The other positive learning presented in this paper is the development of better treatment for each type of patients, besides the importance of nurses and epidemiology in management of pandemics. Poon et al. (2004).

2. Literature Review

2.1 What Means to be in the Front-Line during a Pandemic?

When someone decides to be in the front-line during a life-threatening pandemic, as the COVID-19, its means he/she has taken a choice or decided to put his/her life and possibly the relatives at high risk, Sim (2020). This is exactly what many healthcare workers around the world had done due to their profession and ethical commitment towards their community. Favini (2020).

Being at the front, facing a deadly infectious disease like COVID-19 means not only delivering a collection of physical and mental sacrifices, but also collecting lots of observations that can be exploited further to create better absorption and create realisation for what can be done next based on this treasure of experience. Favini (2020)

Thus this paper comes to touch base on the contribution and to learn from the multidisciplinary panel, to give a perspective of front line type, shape and extent. The front-line brought here and managed by the concept of ‘physical is relevant to mental’, i.e. the more one in the front line and he/she can reflect in the right time and place the more this knowledge would valuable and original. Poon et al. (2004); Williamson et al. (2020).

2.2 Challenges for Effective Treatment for Some Patients

Since no effective treatment is still available for some type of patients, many physicians felt the challenge of this disease being responsible critical decisions that might make a difference between life and death. This uncertainty kept the health care workers under immense stress, while also being worried about getting infected from the patients under treatment. Buheji et al. (2020)

2.3 The Idea of Why PPE Matters

There have been lots of discussions and media coverage about the shortage of personal protective equipment (PPEs). However, many do not understand the depth of this issue and why the front liners being so sensitive to it. The issue simply comes from taking risks are not of the values of any medical professionals, same as making life-and-death decisions for others.

Working without proper protective equipment means for the front liners that they not only compromising their own personal well-being, but also that of their families and colleagues; especially that the disease still being surrounded with lots of ambiguity and this increases their unpredictable situations day by day. The lessons from the shortage of the PPE in previous diseases less to catastrophic end and same did the COVID-19 which made many of the front liners suffer from delayed anxiety symptoms, traumatic memories, PTSD or depression. Poon, E et al. (2004), Koh et al. (2005).

2.4 Protecting the Most Vulnerable

One of the most important lessons learned is the importance of wellness and the protection of the health of vulnerable populations. Bloomberg (2020) findings from China and Italy about the COVID-19 became the concern of all the front lines healthcare professional as the speed of information and publication sharing boomed during the first three months of the pandemic showed that elderly and the most vulnerable are the ones that infected or admitted to critical care. This helped to understand better the disease and to develop protocols that minimised many complications. Edgecliffe-Johnson and Kuchler (2020).

The coronavirus has a relatively low fatality rate and has largely claimed the lives of the older patients with weaker immune systems, or those with pre-existing conditions. However, in the fourth month of the pandemic, the front liners started to see deaths of the younger patients, which made the disease even more difficult to understand. Montemurro (2020).

2.5 Incubation and Transmission

The challenge of the front lines come from the long incubation the asymptomatic that carry the virus and go undetected and unknowingly infect others. Buheji and Buhiji (2020)

One of the benefits of the pandemic is the quality and the speed of the collaborative learning that the healthcare staff and authorities managed to establish and led to the development of protocols and best practices especially in the area of the critical care.

2.6 Importance of Patients Pathways Planning

Planning patients' pathways are one of the most important aspects of dealing with viral disease. Speed and quality of handling patients improved in just two months as if the disease protocols have been there for a long time. In certain countries, even a fever clinic was established, and the detected or suspected cases, the tests would be taken to the labs, and other contacts of possible cases would be isolated.

2.7 National Efforts for Preventing the Front Liners from Being Overwhelmed

One of the good experience that would stay in the memories of the front-line are the efforts, the policies and the protocols that were developed to help prevent the medical staff from becoming overwhelmed by the number of the admitted cases. This passion and national collaborative support leveraged great positive feelings and enhanced the learning cycle among all the healthcare participants. Lin (2007), Williamson et al. (2020).

The challenges, the fear, the uncertainty, the ambiguity, the shortages of resources, the support from the community; all developed unique team spirits that typically happens in years and this happened in few weeks from cross-functional staff that many of them didn't work together.

2.8 Health Needs and Innovative Solutions with Focus on Wellness

Due to the speed, the chaos and the scarcity of many resources, the demand for the health needs were effectively addressed by the capacity of the innovative solutions that were exploited by the different multidiscipline stakeholders.

Dr Moez Faris is a professor of Nutrition at the University of Sharjah who sees that health wellness and preventive care starts from the food. The quality and type of food could play a vital role in effective immunity from COVID-19 and similar infectious diseases. This requires a new awareness program about the way we approach food on what to eat and what to not eat. Therefore, Dr Moez calls for a major role of the government to set up a program that encourages consumption of what improve people health and ensures equality between all the people in this area. Montemurro (2020).

The food security also could play a role in the stability of people, and respects lockdown and thus ensure the effectiveness of the lockdown. This, in turn, would help even healthcare workers. As per Prof Moez, even now countries need to set up new programs that support the food basket program and establish a comprehensive awareness program about the essential items that could be purchased in specific quantity during the pandemic or the new normal era. Prof Moez believes that this is even an opportunity to change our children and youth habits about eating junk food or having a priority towards dealing with health food.

3. Methodology

More than fourteen international multidiscipline and health experts in the WHO-EMRO region, a region defined by World Health Organisation (WHO) to be representing twenty-two countries in the Eastern Mediterranean side of the globe, participated in an experts lesson sharing panel. Most of these countries come from Arab Middle East countries, besides North and Horn of Africa and Central Asia. EMRO WHO office is one of the WHO's main six offices which carries wide and active responsibilities. Therefore three leading WHO experts were invited to lead the panel of the discussion using Zoom conference platform. The WHO experts were the regional Director, the infection control leading expert and the mental health expert. The other nine experts are a panel of front line health care specialists and civil community

leaders who are fighting the disease from different niches or areas of threat. These nine experts come from different nationality and backgrounds. The front line specialities varied from infectious disease experts, to ICU consultant, to Geriatric Medicine, to mental health, to professors of social science, dietician, nursing, economy, civil society, education, animal farming, food security and telecommunication. All of these were selected due to their direct and indirect involvement with the front line through their nature of work or research. And all are considered to be experts of reference in their own fields. Favini (2020)

The experts were asked to reflect their experiences and lesson learned after three months since the start of the official announcement of the COVID-19 to being a global pandemic. The method targets to enhance sharing the knowledge and realising the collected observations coming from different perspectives.

The exercise is meant to enhance the capacity of these leading community and regional experts to share their information in an unstructured, yet relaxed manner, and turn all of this bulk of information into a holistic knowledge that would help towards effective conclusions which could be used by the concerned government, public health experts and decision-makers.

The way the zoom unstructured dialogue managed has helped to put threads of anecdotes that can be turned into collective storytelling, like valuable lessons and experiences that could be lived or visualised. Such group collection data gathering open more novel possibilities to turn such valuable qualitative data into evidence-based guideline or areas for improvement, one such methodology or meeting repeated and generalised.

In order to ensure that this paper can be further generalised so that the lesson learned from the front-line workers and professionals who faced the pandemics be extracted effectively and in a relaxed, unstructured yet scientific setting, a holistic framework is proposed.

4. Case Study

The expert panel discussions about the lessons learned which were conducted using zoom conferencing app during the third month since the announcement of the COVID-19 as a pandemic can be divided into four main types of learning: learning on readiness and preparedness, learning in reacting and mitigating, learning in resolving and tolerating, learning in realising and reshaping.

The uniqueness of the shared learning on the COVID-19 pandemic from the front-line experts' panel is that it came in unstructured setting and where those experts showed excitement to share their accumulated learning. Learning is hybrid, i.e. it contains both personal and professional interaction during the experiences of preventing or handling or treating the virus and its impact. Williamson et al. (2020).

4.1 Learning in Readiness and Preparedness

4.1.1 Readiness is All about Availability

The lessons of Dr Jameela Al-Salman come from her experience being at the front line,

middle management and being a leader in the fighting and mitigating the COVID-19 pandemic at a national level in the kingdom of Bahrain. Jameela's main emphasis was that readiness is all about 'availability', where she sees that despite the national and international drills and programs similar to the WHO about getting many countries prepared for such incidences; one still feels not ready to such extent of pressure within a short period. She justifies this feeling by considering the amount of the different parties involved in such national and international emergency that need consistent coordination, besides the consistent demand till last moment for expansion or re-arrangement of the public health infrastructure and its related health systems to meet the unprecedented demand. Favini (2020)

If we apply the formula of (the capacity vs the demand), Dr Jameela mentions here one would need to ensure the effectiveness of the level of the healthcare workers training, the labs capacity, the suitability of the isolation facilities, the national and health communication system and the flexibility of the financial system.. as these need to be put into perspective when making any move or decision.

The (Availability) to be really ready in proper timing make a difference in the whole journey, Dr Jameela confirms. The readiness should be reflected into both all the concerned government entity, i.e. even if the health system is well trained on an emergency situation like most of leading USA hospitals are, but the government is late in reacting to a serious pandemic like COVID-19, this would delay any proper response. Wang et al. (2020).

To improve early prediction, the Bahraini Professor Jameela believes that a yearly national drill is carried out and linked to regional or international drills that would help the health workers know the weakness in the national system and take the necessary measures on time.

4.1.2 The Mental Preparedness to Live and Manage uncertainty

The uncertainty that this virus has made to our pre-set mindsets made us really feel we need to be more humble at what we know, as what we do not know is a lot. This humility made all more energetic and persistent that we need to do more and more, in order to explore what is not known, however, Jameela believes that this could also be learned through drills instead of a life-threatening pandemic. Del Rio and Malani (2020).

Many countries need to understand that when we say that the readiness of the health system is low or high for such pandemic we mean we need a comprehensive system that includes well-trained staff, i.e. doctors of different suitable qualifications, nurses of different calibres, paramedics, cleaning staff, etc. This is besides the other resources like the health diagnostic and treatment facilities, besides the medicines. Buheji and Buhaid (2020).

4.1.3 Establishing Effective Communication Model with WHO and other Regional Public Health Authorities

Dr Ahmed Al-Mandhari, WHO Regional Director for the Eastern Mediterranean (EMRO). A native of Oman, Dr Al-Mandhari has made a substantial, positive contribution to the development and modernisation of Oman's health system, which has witnessed qualitative

improvements in recent years, particularly in areas such as patient safety.

Dr Al-Mandhari mentioned how the EMRO region and its 22 countries had reported the spread of the infection with countries having less than 100 cases to all the way to some countries that have reported more than 100,000 and a total 244,000 positive COVID-19 cases for all EMRO countries. Dr Al-Mandhari reported that there are now, as of 7th of March more than 8600 deaths in the EMRO countries, which represents a total percentage of around 4% from the total deaths from all over the world.

The worries of Dr Al-Mandhari and the leaders of the EMRO region is focused now on first the disruption of the non-essential health services such as immunisation, maternal health services, or services infectious diseases as TB, HIV, etc. The second disruption is the economic impact on the livelihood of people in the region, where millions of jobs lost, with total lockdown more mental health issues are also rising. The impact then on the socio-economic life is very devastating. The closer of the border also affected some essential supplies, including medicines.

Many healthcare systems in the region go through real stress-test, which made suffer the consequences of the overwhelming of their hospital facilities. However, EMRO healthcare authorities in the region have been collaborating as if working under one health system, and this is the uniqueness of this experience. The theme of this holistic system focused on integrating the whole of the government and the whole of the society, and this means even the citizens and the non-governmental sectors, so that they can move in one direction and one policy, based on the WHO 'Health for All' policy. This led to more awareness policies and programs that raised the individual abundance with the public health policies which they are not used to it in this region. The controlling is meant to minimise the expansion of the pandemic. Lin (2007).

4.1.4 Infection Control – Boundaries to Protect Those in the Front Line and Others around Us

Dr Maha Talaat is the WHO EMRO expert in infection control. Dr Maha emphasis that the COVID-19 as a contagious disease have brought along with it lots of lessons on the level of governments in general, public health authorities, hospitals and even the public. However, EMRO suffers a wide range of level of awareness and capacity for implementing the role and regulations relevant to infection control, which influenced the front lines to a different extent. Hence, the knowledge sharing and the transparency of this knowledge flow between the countries also played a great extent for managing or mitigating the disease in each country. Dr Maha ensures that many countries and health systems benefited from the successes or mistakes that have been experienced and shared openly from the different countries. WHO (2016).

Many lessons now within the region, the world and certainly public health authorities and WHO about the meaning of the resilient health systems and how it is related to the capacity to the containment of the COVID-19 pandemic and its related spillovers. This crisis as per Maha taught us and the world the importance of surveillance, tracing, and triage of the

contacts or the infected cases and how they are isolated or quarantined. This needs to be really emphasised again and again.. part of protecting your self is protecting others around. This concept is well known for practitioners in infection control, but we need it to spread more and more amongst the public.

The capacity of many countries extended to its accurate capacity to do the precise diagnostic testing and to enhance the capacity of the testing in just a few weeks to more than 10 to 100 times. The failure of certain countries also taught us lessons about how to avoid such a situation in the future. Buheji (2020a).

Many of the health care staff got infected by COVID-19, because of failing to control the transmission of the virus while dealing with a patient or working with colleagues in the hospital. In certain countries, the amount of those infected from the front liners reached 10% of the total infected. Favini (2020).

Thus, one need not underestimate the importance of the ‘Infection Control Programs’ in any healthcare system and especially the nurses who deal with infected patients. Despite many guidelines produced by WHO, some countries in the EMRO due to the constraints of the facilities and the resources managed to make some adaptation in order to follow the proposed protocols, such adaptations whether worked or not are another lessons learned that could be shared. Buheji and Buhaid (2020).

Since we are going towards new normal; Dr Maha emphasis that the investment in health system infrastructure should improve, specifically the area of contact tracing and surveillance system. The COVID-19 raised the importance of the national alert e-systems, which would help the country to take the right decision at the right time.

4.1.5 The Complex Emergency Role and the Mental Health Readiness

Dr Khalid mentions 12 of the 22 countries in EMRO have faced complex emergencies at the start of the COVID-19 pandemic. This means that even the people that have been displaced, migrants, or labour workers would also suffer the consequences. This coincides with the study done by WHO published in 2019 that shows that usually, you would have more than one-fifth of the population are at risk of mental health problem. The WHO (2019) study also shows that more than 7% of the population would be having severe mental health problems.

The issue of mental health, as Dr Khalid put it; it is even the most important thing of both the front line and the general population, because if you do not have the proper stable mental health, you cannot follow the public health advice. The risk would increase for those people with severe mental disabilities as those suffering from dementia. The risk extends to people under treatment and those taking medicines. Buheji, (2020b).

The psychology and psychiatric WHO expert finally warns that the mortality rate of those patients in the psychiatric institutions would be higher than the general population by sometimes 10%, giving the example of Germany. Therefore, there has to be a holistic approach that conceives well-being and health during this challenging time. McAlonan et al.

(2007); Lin, et al. (2007).

Dr Khalid mentioned that now the UN Global Humanitarian Response Plan (UN-GHRP) to COVID-19, clearly put the humanitarian support and the mental health at the centre, which means. This means the front line should integrate mental health in all aspects of their response and not to treat it as a separate issue. This requires public health authorities to put more human resources and ensure the continuity of services in the area of mental health. Also, the front line staff should adopt an indicator for the mental health and psycho-health support. This indicator would help to measure how many countries have activated and involved their front line workers in psycho-health support. Favini (2020), McAlonan et al. (2007); Lin et al. (2007).

4.1.6 Social Worker Front-line in Time of COVID 19

Dr Dunya Ahmed is a leading expert in the Bahrain Women Supreme Council besides being a Sociology and social science professor at the University of Bahrain. Dr Dunya believes that when we talk about front liners, people mainly think of medical staff such as doctors and nurses, with less attention are given to other very important disciplines for the livelihood and the quality of life as the social workers. Besides her day to day work to solving women problems and challenges during the pandemic in Bahrain, Dr Dunya refers to other studies as that of Berg-Weger and Morley (2020) which shows how the social workers protect the most vulnerable during COVID-19, referring to specifically to the elderly. The social workers also were in the front amongst the healthcare workers, besides being in the field to solve the instability in the residential communities, and the demands from the social service agencies that all together worked to ensure the safety of the different community groups during the crisis. Golightley and Holloway (2020).

There are a lot of learning from this pandemic both professionally and academically, as per Dr Dunya. The unprecedented challenges, such as the need to develop new ways to keep communication with families in time of lockdown, and developing new activities that keep social distancing all have sharpened the calibre of the social worker and enhanced their capacity for future coming demands, Buheji (2020a).. The role played by certain social workers inside the hospitals with, for example, children young asylum seekers, have managed to reduce the risk to many individuals and groups exposed to a variety of dangers. The amount of the number of customers or patients served in these few months for many social workers shows how much this pandemic brought with it tough yet accumulated experience and knowledge that is going to influence the development of the profession in the future. This experience now needs to be documented and transformed to less developed countries, to avoid more global complication and minimise any potential social instability. Malcolm and Margaret (2020).

Dr Dunya showed there is a difference between healthcare and social care which they can complement each other once healthcare professional work more closely with the social workers as they did in certain areas during this pandemic. This would ensure that the medical

and healthcare advances are tailored to problem-solving and that these services fit the needs and abilities of individuals and the community. Golightley and Holloway (2020).

4.2 Learning in Reacting and Mitigating

4.2.1 Benefits of High Level of Transparency during Pandemics

The more the health authorities are transparent in disseminating, sharing and explaining updated information, the more the system would be robust to deal with the pandemic. As this transparency helps everyone and make the public more engaged. Dr Jameela mentioned the example of Bahrain, where part of its causality of success in dealing with the pandemic is its early engagement of the public and the high level of transparency.

4.2.2 Stretching the Capacity

Dr Jameela reflected on the experience about stretching the capacity of the patients-beds of many hospitals in the region, or the world to be doubled, or tripled. She points out while this might be achievable in a short time, this does not guarantee the quality, as you need to proper health professionals and other services for each of these beds. Besides, again even shifting staff to focus on this pandemic or emergency outbreak should be really thought carefully so that we do create unnecessary problems on other health diseases. Del Rio and Malani (2020).

4.2.3 Understanding the Characteristic of the Virus and its Influence

Professor Ahmed Shurab is the ICU consultant and professor at the Medical School and Hospital of the University of Sharjah. As per Prof Shurab that this wide clinical manifestation and wide spectrum virus which range from asymptomatic to severe shock, lots of missing information about the disease treatment. Here, comes the importance of sharing knowledge and information. These information gathering should be collected by the WHO and then supported by experts explanations, prediction models and monograms. Buheji and Buhiji (2020)

The lesson learned especially regarding the minimum infrastructure that would help to face such pandemic in the future. Hence, it is advisable that regardless of the condition of the country, there should be policies set in place for facing a similar future challenge. Creation of evidence-based plans for management of crisis would reduce chaos. Buheji (2020a).

4.2.4 Breaking the Chain of the COVID-19 Transmission

One of the main goals to break the chain of the COVID-19 transmissions is taking care of the front liners, ensuring the effective screening of the staff and besides the hospital visitor, confirms Dr Mohamed Nasef (ICU Consultant) in one of UAE leading hospitals. Dr Nasef sees that the number of cases is very relevant to two issues: 1- the percentage of screening in the country and 2- the social lifestyle in the country, i.e. how the people gather together or deal with each other.

4.2.5 Lessons from the Severely Infected Cases

Dr Nasef has seen that in the COVID-19 there is a lot of severing disease that needed ICU and oxygen ventilation. Due to no evidence-based treatment, all the patients need to give consent about the use of medicines as the anti-viruses and/or chloroquine treatment. This keeps lots of pressure on the critical care staff as they know that all that they can do is to give supportive care for the patients.

Dr Nasef has seen that if the patient has no complications, usually they can stay on ventilation for 3-5 days and then they would get well over time, however, if the patient has comorbidities then 90% of these patients would stay longer than one and this period can increase depending on how much the case is complicated.

In just a period of three months since the start of the pandemic, many front-line professionals started to have more experience to deal with different types of COVID-19 cases which shows that the readiness of the medical staff became better equipped to deal with this mysterious disease. Hence, now we experience less panic among the medical staff when dealing with a COVID-19 patient and segregate his chronic disease treatments from the treatment of the infectious disease. Williamson et al. (2020).

After more than one month, we started to see a positive attitude from the staff in dealing with the COVID-19 since confidence increased and we started to see also innovative solutions come from the staff regarding this matter.

4.2.6 Dependence on Local Capacity Helped to Engage the Civil Community

Dr Ramiz Akzay, A founder of one of the leading private universities in Albania, mentioned about how the COVID-19 changed the way of life in Albani and sharpened the capacity of the civil society in the country to be self-dependent and to work together with the health authority to isolate a certain part of the country while maintaining the clearance and the safety in the rest of country.

4.3 *Learning in Resolving and Tolerating*

4.3.1 Importance of Being Resilient

One of the main characteristics of healthcare professionals is that they need to be resilient, which means that they learn from their mistakes, and they update their information on the disease. The other meaning of being resilient is that besides being focused on updating our knowledge on the pandemic, this should not affect the other important health and medical services to be delivered for the other diseases. Dr Jameela that emphasis that this balance between ‘emergency’ and ‘important’ services needs to be in the mindset and of the concern for all those in the front line.

Maintaining the quality of the services, whether through the telemedicine or when we start to open back and seeing the patients face to face, is expected to be also of resilience-related. The resilience of the system should also be designed that it would have a default margin for the working timings, the financial system, and the manpower.

4.3.2 learning to live with Pandemic while Staying Positive

It is clear now that this pandemic would stay with us at least a year from now. In order to grow and learn, we have to stay positive. This is not easy, but this can be done. We need to teach also the rest of the world as we learn.

The other way for us to stay positive is to take care of those in the front line. We have to ensure their safety and their mental well-being because they only can help us to fight the disease and its consequences. This would also ensure that the whole health system also stays positive and persistent in continuing the fight even if this pandemic takes a long time.

4.3.3 Protecting the Front Line after Opening the Airport

The EMBRO director emphasis that the WHO believes that part of protecting the front line specifically with this disease is the strict control on the airport, after re-opening. Keep using the modelling to prevent positive cases to overwhelm the front line.

4.3.4 Sharing the Lesson from Front Line with Africa

The importance of lessons learned from the front line to Share Early

Dr Buheji mentions two main purposes for this collection of reflections now and not later from the front liners. First, they would create a change in the mindset of the front line staff where the collective observations would create absorptions and where these observations would create realisation about the depth of the lessons learned and the extent of the opportunities that can be exploited. The second reason Buheji believes is the possibility of sharing these learning with countries in Africa and other developing or under-developing countries where the experiences and the readiness of the health system are not well matured or under-equipped for such pandemic. Buheji and Ahmed (2020).

Dr Buheji suggests that the WHO-EMRO should have a specific setup for benefiting from the early accumulated experiences of specific countries front-liners to help to fight the disease in other countries where the pandemic wave is just starting. The learning accumulated by those in front should help to transform the mindset of the decision-makers hence help shake-up some of the previous assumptions, the attitudes of how we deal with emergencies or health setups, the behaviour of the public and how we manage the reactions of the people. Buheji believes with the 'new normal' the capacity to have a resilient mindset would be essential for effective outcomes, as no more we will find in the new era 'best practices', we would be living in an era where 'test practices' would be the norm. Montemurro (2020).

4.3.5 Development of Health Systems in the Case of No Vaccination for COVID-19

Professor Tallal Abdul Kareem from Iraq called upon the preparation of the WHO to develop many of the healthcare systems in the world in the scenario where no vaccine would be discovered for the COVID-19 and especially that the virus shown to have genetic mutations over time. The healthcare system should be prepared to absorb the protocols for adaptation to the virus presence in real life.

Dr Al-Mundhari believes in the case of this scenario, that the world would have no option but to improve the public health and its values. Currently, in most of the countries, public health does not meet the standard and the challenges that would be needed if no vaccine could be discovered. This would start with the adoption of the International Health Regulations (IHR) 2005, which includes the following: fostering global partnerships, strengthening the national disease prevention program, conducting surveillance, control and response systems, besides strengthening the public health security in travel and transport. Then the country is expected to strengthen the WHO global alert and response systems, strengthen the management of specific risks, sustain rights, obligations and procedures and finally, conduct studies and monitor progress. Wang et al. (2020), WHO (2016).

If countries really drill on the IHR 2005 latest editions, they could have controlled the pandemic in a much better way. Besides, as per Dr Al-Mundhari, we need to ensure universal health coverage (UHC) program is really linked to the SDGs and specifically the top three. The Availability of UHC would ensure that people would trust the health system and keep up with the testing and treatment requirements without being worried about their livelihoods.

4.3.5 Managing the Stress and Mental Health of the Front Line

Dr Khalid Saeed- WHO Mental Health Expert and his worries go beyond the infection of the disease to areas of the people well-being that is threatened by the instability or deterioration of the economic and social structures, beside the shack-ups of the norms. All these as per Dr Khalid are leading to another degree of stress. Recent studies, shows that the degree of stress among the population of Iran is about 65%, while for China and USA it is about 35% and 48%. These percentages never precedent before, and it is from people that they are admitting they need psychological help. Bloomberg (2020), Buheji et al. (2020), Lin, et al. (2007).

This means there are increasing bulks of the population feeling distressed and concerned about the uncertainty for not only their personal safety, or the safety of their families, but also for the safety around them, Poon et al. (2004). This off course multiplies if you are a front line staff. This is even more worrying when combined with the loss of jobs, loss of economic stability, lack of economic stimulation plans. This is besides the social isolation, lockdowns and the fact of having to do e-learning. All these factors have to do with mental health problems.

Different studies that have been taking over the time of the pandemic in specific countries show that the rate of distress is increasing. Dr Khalid brings the example of a study taken in Ethiopia which the rate of distress increased by 22% in the general population, while the study shows that now one-third of the population is suffering general anxiety disorders. Again this fold certainly reflects on the medical staff and those on the front line. Buheji et al. (2020)

Dr Khalid mentioned that studies on China show that the rate of distress among the health worker due to COVID-19 reached 70%. This is compared to the general population distress; that is 35%. I.e. The front line worker is exposed as twice as the general population individual. Actually, as per Dr Khalid, another study shows that the front line worker is

distress able by more than 50% higher. Bloomberg (2020)

4.3.6 Epidemiology – Lesson for Post-Pandemic

Dr Esra Bani an epidemiologist from USA, born in Sudan. She sees we should focus from now on transforming these lessons on how to strengthen the healthcare system. Dr Esra believes we have three major problems that the front liners are facing together: 1- the COVID-19 as a disease, 2- the Socio-Economic and Mental Wellbeing threats, 3- the data analysis of the pandemic.

The third problem is enlarged due to:

- a) The info-demic, which means the excessive data that is coming from the different research on the COVID-19 and at a very high rate.
- b) The Miss-information or less-information which become part of public health strategy, with the excuse to make people feel safe or do not panic
- c) The rumours and this is especially a problem in less developing countries in Africa where no valuable and misleading information are shared within the general public through WhatsUp and other means and create a problem for the public health efforts to control and fight the disease.

These data-related problems are real lessons learned from this pandemic as per Dr Esra, and this raises the question of how we make our population immune from such data mishandling even before the outbreak happens. Montemurro (2020).

4.3.7 Learning to Live with COVID-19 Pandemic

‘We must learn to live with COVID-6’ as per Dr Nasef which means now, and as pass 6 months since the outbreak, we need to build the capacity to deal with the new normal, i.e. while the pandemic still exists, we can still practice our normal life, but with precautions, i.e. use of PPE and follow the protocols.

Dr Esra, on the other hand, sees that while we decide to live with the virus the WHO need to rename and re-categorise the healthcare systems according to their level of readiness to deal with this pandemic or next pandemics.

Dr Zahra Khalifa gave her experience as a leading healthcare Officer and a family physician in the ministry of the interior by briefly appreciating the experience of the collaborative efforts between the different Bahrain government entities and the public which led to the success of mitigating the risks of the COVID-19 in Bahrain in the first three months of the outbreak. Sim (2020).

4.4 Learning in Realising and Reshaping

4.4.1 Adopting Holistic Thinking in Dealing with Challenges of COVID-19

Dr Khalid believes similar to Dr Al-Mundhari and Dr Buheji, in emergencies while there are

problems, there are also lots of opportunities to move forward.

Dr Buheji agrees with Dr Khalid that we should not focus only the physical health, but to have the holistic well-being as the core of our focus, as we are trying to protect the population from the spillovers of the COVID-19. Dr Buheji mentions that most of the new papers that the inspiration economy team shifted from identifying the source of the disease and its opportunities being a complex problem towards more now to managing the spillover of the disease. This holistic approach came after publishing more than 14 papers so far on the subject in different areas in relation to the pandemic. Buheji (2020b), Buheji and Ahmed (2020).

4.4.2 One Health Approach

Finally, part of the resilience Dr Jameela called for is the one health approach. The one health approach is very important for managing the zoonotic diseases, or pandemics similar to COVID-19 as it covers would have a holistic mindset that would see the problems and the challenges from different perspectives. i.e. the environmental, the animal and the human side of the story.

Thus, the lesson here, as per Dr Jameela, one national team is always needed in every country that sees the role of the different entities to address this approach, beyond the ministry of health, i.e. all the government ministries need to be involved to ensure the success of the health emergency plan. Also, all the health system partners need to really work as a team so that you lead by example.

4.4.3 Uniqueness of Treatment for Each Type of Patient

Dr Nasef emphasis that due to the continuous mutation of the genes of the COVID-19, besides the typical co-morbidity of the patient making the diagnosis requirements along with the treatment to be different and as if customised to each one. Dr Nasef gives an example of different symptoms from patients complaining mainly from Diarrhea, or abdominal pain, or severe headache, or asthma. Dr Nasef confirms that almost all of these people they have; however, one common vital sign that is hypertension. Some patients might go to the severe stage of the disease where they develop acute kidney injury. Although no reason found, or casualty for such developments to occur.

Dr Nasef and Dr Saeed agree of a symptom of deliria where patient when they are wakeup again after acute care treatment, they do not believe they are still alive. And this incidence happens to most of the patients after long treatment. The best solution was the reorientation program, where the patients are put in open places. Then, they are trained on how to use the PPEs to protect themselves and others, before they are discharged to hotels for 14 days, till they are totally safe to go back home.

4.4.4 COVID-19 Leading to a New Normal World

The front liner Dr Jameela says that ‘now we realise that this pandemic would lead to a new world where the roles of the game would change and many things of the world would

change', however the most important we in the health system learned more than any other sector about many things that need to be improved to meet this new world and some might be even from outside the health system.

4.4.5 Inspiring Personal Lessons Learned from Front-Line

Dr Jameela, the personal lessons are a lot. As a physician and as a person who has been dealing with several similar cases to COVID-19. This pandemic says this brilliant Bahraini infectious disease physician has highlighted a lot of issues about us being human. Many of us front-liners have learned a lot for our personal life and many would surely re-arrange their priority in life, in fact, many of us are already started doing that. Now, we realise what are the important things in our lives and what we can consider to luxury or unnecessary. Many things we can survive without and still would live well without it. Hence, it is time to reflect and absorb what needs to be changed in our life journey. This new mindset would re-define to many of us what should happen to us and would happen in the future. Koh et al. (2005)

4.4.6 Need to learn the Inspiring lesson from the Front liners

WHO regional leader Dr Al-Mandhari emphasised that more efforts similar to the leading efforts of the inspiration economy need to be motivated so that the world reflect and cultivate the number of experiences the front line health workers have gone through and build on it strategies for next phase.

The most inspiring thing that those front lines are fighting for all of us and are opening for us new opportunities, including re-evaluating the way things used to be done. Buheji and Ahmed (2020).

4.4.7 WHO-EMRO Strategies to Support the Front Line

The first step of the strategy, which is supporting the front line is the control strategy which applied at the beginning of the outbreak and helped in focusing on sporadic cases and clusters, besides preventing community transmissions—then followed by efforts to reduce mortality by providing clinical care and strengthening the healthcare system, besides increased its capacity to protect its staff and prevent internal transmissions. This gave the front-liners the capability to prepare themselves and slowing and spreading the infected cases besides, WHO focuses on empowering the staff to help themselves and enable them with proper facilities and equipment, especially the ICU facilities.

Dr Al-Mandhari mentions about the five WHO main global strategies that start with the control measures through suppression of any possibilities of major community transmissions. For that, many governments had to cancel mass gatherings at the same time, which is supporting much research on the vaccines. KHN (2020).

Dr Al-Mandhari mentions about the instability of some of the EMRO countries which have weakened over the years the infrastructure of the front line and its capacity to fight such pandemic. Thus, at the national level, the WHO supports effective coordination and planning

among the different sectors, besides engaging and mobilising communities. Also, the WHO is producing lots of guidelines specific to the COVID-19 that would help to reduce the risks in specific healthcare settings and thus would help to control the possibilities of the transmissions to front-line. KHN (2020).

4.4.8 Main Positive Learning by the Front Line during the COVID-19 pandemic

Professor Rashid Al-Abri, is a Professor of ENT at the Medical School of Sultan Qaboos University and hospital - Oman. Prof Rashid sees that this pandemic brought with three positive learning. The first one is the increase of the healthcare staff confidence in deal with such level of national emergency, and this increased the confidence in turn between the community and the healthcare providers.

The second thing certain developing countries governments have put down budgets now for research opportunities on the COVID-19 and its related impact, and this gives lots of potential for the development of research in EMRO region. The budget covers researches to look into the healthcare services and the pandemic, the behaviour of the virus itself, the psychological effect and in addition to the socio-economic effect. Lin et al. (2007)

The third opportunity that this pandemic brought to the region and even to the front line medical staff is to use the e-learning platform more besides using the e-medicine facilities which were a hesitation era before the COVID-19 outbreak. Buheji and Ahmed (2020), KHN (2020).

4.4.9 Ensure the Effective Communication Setup during the pandemic in the Most Vulnerable Areas

Saeed Ibrahim is a telecommunications (ICT) experts from Sudan. He believes that the most important lessons during this pandemic could be more retrieved if countries like Sudan and other African communities could join this type of platform to share and learn their lessons, especially that the COVID-19 is just starting in that part of the world. Hence, Engr. Saeed advises that part of the infrastructure preparations and development for WHO should be in the area of ICT, to ensure the effectiveness of data collection and the Availability of the proper capacity to disseminate and analyses or synthesis the knowledge learned nationally and internationally. He warned that failing to do so in this globalised world would influence the whole world negatively.

4.4.10 Salute for the Nurses as the Front of Front Line

Nurse Nawal Buhaid from Bahrain talked about the amount of sacrifice from nurses, especially in the EMRO region and all over the world. Where they never they hesitated to face such life-threatening disease, and this is the moment that they should be given the proper recognition status both locally and internationally.

More encouragement for nursing as a discipline should also come from the government so that we maintain the differentiation of this service in times of crisis, as nurses should not be

suffering while they are fighting for other people lives. Buheji and Buhaid (2020).

4.4.11 Empathetic Relations with Patients

Dr Nasef emphasis what Dr Jameela mentioned about being human where the trust and mutual respect are being built with most of the patients and where the medical staff deal with the patient with empathy, while the patients also appreciate the care given to mitigate the risks he/she went through, Sim (2020) . This means now, as per Dr Nasef, many medical staff bypassed the burnout cycle in the relation between the medical staff on one side and patient and his family in the other which might have existed in a certain time at the beginning of the pandemic.

4.4.12 Maintaining the Wellness of the Future Generations

Dr Buheji also warns that more work should be done on the impact of the pandemic and its related policies on the mental health and the wellness of the coming generations, as the children who are living these challenges today have already adopted many positive and negative behaviours that are going to be turned to be attitudes that would influence our world in the future. Buheji (2020a), Montemurro (2020).

Dr Khalid Saeed advise against adopting the mental health school programs that was recently developed by WHO for managing the impact of the COVID-19, as it helps to compact the stress created by the pandemic and in the same time support the health and the mind set as children and youth go back to school. He mentions the example of the story of ‘I am a hero’ developed by the UN Inter-Agency Standing Committee (IASC) as a best practice in dealing with children in this difficult time. Buheji et al. (2020)

5. Holistic Framework for Extracting Front-Line Lessons of COVID-19 Pandemic

This paper showed the importance of extracting the fresh thoughts and reflections of those in the front-line, during the different stages of a pandemic, similar to COVID-19. The framework encourage that lessons learned by carried in an unstructured way, i.e. through discussions and then categorized according to the constructs of the lesson learned. Here, the constructs are made as per the type of reflections and the stages of facing the pandemic, i.e. 1- readiness and preparedness, 2- reacting and mitigating, 3- resolving and tolerating and finally 4- realising and reshaping.

The framework suggests that front-line flouting knowledge assets are around one of the following pandemic issues or teams, Buheji (2014). For example, the lesson can come from public health authorities who are in the front-line, the different government entities team members who are experiencing the challenges of the disease or its implications and spillovers. The pandemic or the COVID-19 awareness, testing and screening program stakeholders also have important lessons to be shared.

In order for the framework to be comprehensive and tackle both physical and mental health, besides wellness it should be based on a multidisciplinary approach, i.e. the front-line sources

would not only the physicians, or the nurse, the dieticians, the health visitors, the psychologists, the psychiatrists, the social workers, the immunologists, the infection control, and the ICT engineers if we are to cover countries with remote space and those communities with many vulnerable. There are other professions not included in Figure (1), as we focused mainly on health and wellness systems. i.e. police, retail workers, etc. all can be included if this framework can be expanded to be a national one. It can also be a communication model for the development of any guidelines in the future.

Figure (1) shows what and how to extract from knowledge, since the lessons learned can be extracted further as per the experience with both the positive and negative cases and the screening program. The social and psychological support system staff also would have different lessons than those working with the patients only. They would trace the level of mental wellness.

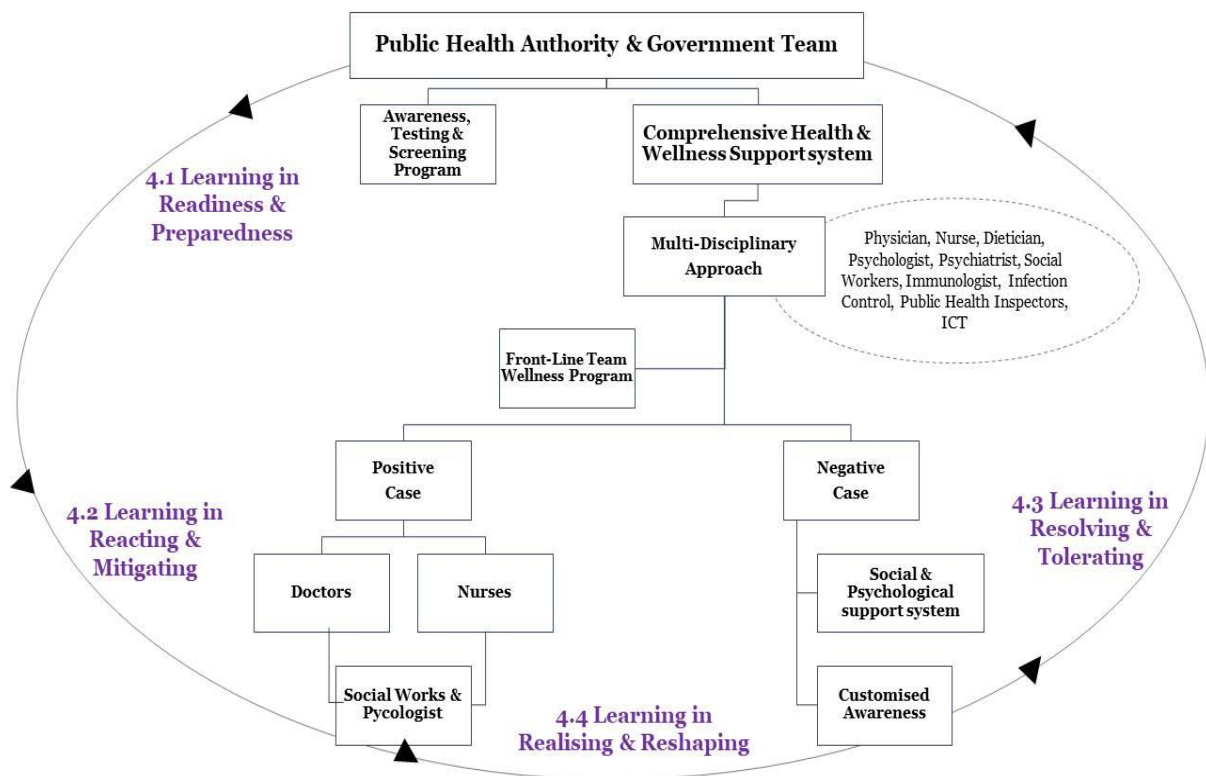


Figure 1. A Holistic Framework for Extracting Front-Line Lessons of COVID-19 Pandemic

6. Discussion and Conclusion

This paper shows that any future framework needs to take all specialities during pandemics by considering multidisciplinary works. Working in partnership has many advantages for both people and the professionals involved as this allows the service user to be dealt with by different professionals with different skills. The work here also helps the professionals as they are able to work in multi-professional teams and, in turn, to work in multi-agencies.

Therefore, multidisciplinary work brings together all of these.

The implications of the multidisciplinary unstructured approach of observational data collected for the lesson learned from the front lines during the pandemic in the paper represents an original methodology for the alignment of the holistic perspectives from the different disciplines facing the disease or its impact in the same time but from a different factor of risk or niche for improvement.

The implication of this work is in both in the way of how the valuable information is extracted from the those who experienced the challenges during this global emergency and how these valuable lessons learned could be integrated and optimised to face the current and the future pandemics or similar risky emergencies.

The other indirect implication of this study is that this multidisciplinary approach can be an effective means for dealing with future complex situations in areas relevant to life and livelihood, such as socio-economic decisions, education, transportation, supply chain development, etc. that are also need a holistic mindset.

This study is a very important tool for managing the mindset of the leaders in all the speciality fields and the decision-makers that could transform conflict situations to a collaboration synergetic and empathetic operational program where the different professionals could through dialogue delver multidisciplinary perspectives that would lead to the development of new guidelines or protocols.

This paper brings in a comprehensive framework with a specific focus on approaching original realised knowledge and learning from a multidisciplinary approach to enhance the outcomes and the learning for all the stakeholders of the national emergency plan during pandemics. The limitations of this paper are that it focused only those involved directly with the health and wellness systems. i.e. comprehensive front-line lessons learned can also include the police, the retail workers, etc. especially in studies where a national plan is targeted or where an effective communication model for the pandemic can be developed.

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