

Role of Family Doctors and Primary Health Care in COVID-19 Pandemic

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Abstract

The world has currently been plagued by way of the pandemic of COVID-19. It has spread rapidly in a speedy time affecting around 210 countries and causing much death that is increasing daily or by the hour. Thus an efficient health system is needed that acts swiftly to limit its spread and complications. Primary Health Care (PHC) is the first level of contact between the patients and the health system. Its main objectives are; to promote the health of the individuals and the community, to prevent illness of individuals and family members, to provide medical care for common illnesses, acute & chronic illnesses and to manage ongoing psycho-social problems that are either related to the problem or those that have been created by the medical illnesses. Family doctors (FDs) are considered the gatekeepers in the fight against any outbreaks or illnesses. They, by the nature of their work, are very close to the patients and their families. Therefore, they have a greater chance of knowing about their patients' ailments and any new changes in their health conditions. Hence, they could be very helpful in combating any outbreaks and its consequences, in particular Covid-19.

It is well known that to build up a well-developed strong nation, governments must ensure the provision of three main services that must not be endorsed to any third party; health, education, and housing. Because PHC is the care based on disease prevention, early detection, and safeguarding the public, it ought to be the foundation of any health services provided for the nations. The recent crisis has shown how vital PHC & Community Medicine is in being a shield, and protecting the whole community by setting measures for the containment of the diseases. In this review, we will discuss the expected role of the FDs and PHC team in combating disasters or pandemics.

Key words: Covid-19, Corona, Family Doctor, Pandemic, Epidemic, Primary Health Care

Introduction

The world has recently been plagued by the pandemic of COVID-19, which has spread swiftly and in a very short period affecting around 210 countries around the world and causing much death, which has been increasing not only on a daily but even on an hourly basis.

It all took place when pneumonia of unknown cause was detected in Wuhan, China which was first reported to the Chinese WHO Country Office on 31st of December 2019 (1).

On the 9th of January 2020, WHO issued a statement warning of the risk of human-to-human transmission (2). Then the outbreak was declared as a Public Health Emergency of International Concern on 30th of January 2020. While, on March 11th, 2020, the WHO announced COVID-19 a name for the new coronavirus disease and declared pandemicity of the problem affecting many countries around the world, which later lead to more than one-third of the world population being locked down (3).

COVID-19 is from the family of coronaviruses (Coronaviridae). The virus is very small with a diameter of 75 to a hundred and sixty nanometers (just to compare, a human hair is 60000 to one hundred thousand nm). It is a single-strand enveloped RNA virus. The coronavirus name derived from the Latin corona which means crown, as, under electron microscopy, the viral envelope appears crown-like because of small bulbar projections formed through spike (S) peplomers. It is stated that COVID-19 (SARS-CoV-2) is inhibited in bats and likely be transmitted to the human through pangolins (4).

Most people usually get infected with one of these virus families during the stages of their lives that do not cause any major health problems, except for some epidemics which have happened previously such as SARS (severe acute respiratory syndrome) that occurred in 2003, where 8000 people were infected and 800 died., and MERS (that is related to the respiratory syndrome of the Middle East) in 2012, affecting 1329 people and killing 525 (5).

When infected with COVID-19 virus, many people, 81%, do not show any major health problems but have mild to moderate disease and most recover from it without needing hospital treatment. While 14% will get severe illness and 5% become critically ill with breathing difficulties (6). Everybody is prone to catch COVID-19 and become seriously ill however people who are at more risk of COVID-19 and developing serious illness are; elderly, patients with chronic illnesses like DM, and diseases such as heart, liver, renal or respiratory illnesses, patients with low immunity, pregnant women, and people with disabilities (7).

COVID-19 could be very contagious to the extent that even people with very mild symptoms can transmit the virus. Patients can be infectious for as long as the symptoms last and even on clinical recovery. Some people may

additionally act as super-spreaders; a study reported that an English citizen after attending a conference in Singapore was able to infect eleven other people while staying in an Alps resort and after returning to the UK (8,9). To highlight its contagiousity it was found that the first 100,000 cases occurred during 66 days, the second 100,000 in 12 days, the third in 3 days, after which the infection was almost at the rate of >50,000 per day. The total number of cases of Covid-19 till the 1st of July 2020 has reached more than 10.5 million cases around the world, (10) while the daily number of cases shows an increasing number without any signs of decline.

The percentage of distribution of cases among countries was reported to be the highest in the USA (>25.8%) then Brazil 13.1% and Russia 6.2%. However, these figures have been changing between countries each day (10). Nevertheless, the good news turned into approximately the recovery rate reaching >50 in some. And as of the 6th of May, the total recovery rate worldwide was around 34% which improved to almost 49% on the seventh of June (10). Despite that, WHO revealed that the mortality rate as of March 3 was 3.4%, (11) which contrasted from country to the next and from one time to another (for example, it reached sometimes to more than 10% in Italy). The number of deaths has been expanding during an extremely shorter timeframe. Statistics have indicated that the first 100,000 deaths came on around the fourteenth of April (105 days since the start of the pandemic), the second 100,000 deaths occurred (1st of May) after fifteen days, the third 100,000 deaths happened (on 15th of May) and the fourth 100,000 deaths took 22 days (6th of June). By the first of July, the USA was on the top list of the ten countries with the highest death rate with a record of >130,000 deaths.

COVID-19 is widespread and has not only impacted the prosperity of individuals but moreover, it has influenced every division of life starting from the economy to the other sectors. Some examples of what it has brought about are the following (12):

- 30 trillion dollars loss in the global economy
- 71 to 100 million people are pushed into extreme poverty (13)
- The sharp drop in oil and gas prices had a negative economic impact on nations
- It is reported that around 1.6 billion children worldwide are absent from school
- The restaurant and cafe sector in the United States has lost \$225 billion
- There is a loss of \$314 billion in the aviation sector
- The various sports including football and various other championships lost about \$600 Billion.
- 75% drop in retail sales
- The share value of the car manufacturing industries has lost 25% of its value
- Loss in Cinema & film production, Cargo, Cruises
- 1 in 3 Americans did not pay their rent last month (as reported by the CNN in April 2020)
- The Arab League estimated that 7 million jobs were lost in the Arab countries (14).

Signs and Symptoms

The most widely recognized manifestations of COVID-19 are fever, dry cough, and tiredness. A few patients may complain of aches and pains, nasal congestion, sore throat or diarrhea, conjunctivitis, headache, loss of taste or smell, skin rash, discoloration of fingers or toes. These symptoms are usually mild and begin gradually. But, some will develop serious conditions and will have difficulty in breathing or shortness of breath, chest pain, and loss of speech or movement. In any case, individuals of any age who experience fever, cough, and difficulty in breathing should seek medical attention.

Family doctors and primary health care

Before we elaborate on what is anticipated from the PHC at some point in the pandemic, we will highlight in brief the concept of PHC and the attributes of FDs making them at the frontline all through any epidemics or disasters.

Notably, PHC is the first level of contact between the patients and the health system with the main objectives; to promote the health of the individuals and the community, to prevent, to provide medical care for common, acute & chronic illnesses and to manage ongoing psycho-social problems that are either related to the problem or those that have created the medical illnesses. The main principle of PHC service that makes it superior to other disciplines is: the provision of personal care to individuals, taking into consideration the family and population health and the concept of offering continuity of care. Moreover, the given care is efficient, appropriate, sustainable, affordable, and cost-effective. Most importantly, the care is accessible to everybody, and across all the disciplines making it inter-sectoral and interdisciplinary. In supporting the importance of PHC, the American Academy of Family Physicians stated in a document entitled "Delivering on the promise of primary care" that "PHC should be predominant because it provides better healthcare as people with access to PHC can live longer and healthier. It provides better care and studies have shown that with more PHC in any country, the infant mortality rate is reduced with "more equitable distribution of health to the population". Also, PHC costs lower than other health care services by 33% because of less hospitalization and less duplication of services (15). It is reported that the health of the nation is better in areas with more primary care physicians and people receiving care from the primary care physicians are healthier. What's more, for every one extra FD per 10,000 people is found to be associated with a 5.3% decrease in mortality (16). Reports from the USA during the 1990s showed that those U.S. states with higher proportions of primary care physicians to population had better health outcomes, including lower rates of all causes of mortality (17).

Role of FDs and PHC in COVID-19:

With this background of information, the expected role of PHC in COVID-19 could be summarized in the following:

- Detection of cases
- Helping to manage mild cases in the home
- Tracing contacts
- Psychological support of the family members
- Mass health education and raising public awareness during and post the pandemic
- Risk management and protection of the health care workers
- Role in returning to normality
- Role in research
- Role in E-medicine and medical digitalization

FDs role in detecting of cases

The EMR region of the World Health Organization issued a document expressing the importance of PHC stating that "health systems oriented to primary health care can react persistently to the new challenges in all countries, whether developing or developed, rich or poor, and in conflict or peace" (18). A Canadian report considered PHC as the initial point of contact for most Canadians attending the health care system, and FDs have the first opportunity to identify and diagnose communicable diseases of concern for public health. Moreover, FDs can empower an ideal public health response for any acute reportable illnesses such as viral illnesses (19). For that, FDs are considered the gatekeepers in the fight against any outbreaks (20).

During epidemics, there will be perpetually a requirement for a responsive and capacious primary health care system. Because, the very survival of any hospital would rely upon pre-hospital screening and pre-hospital and post-hospital care that are provided by the PHC. It is a fact that neither hospital emergency rooms nor the hospitals beds can admit and care for all the sick. Therefore there should be an alternative facility that is able to reduce the burden on hospitals. It is the PHC that is closer to the patients' homes and that conveys efficient care by a trusted and familiar family doctor (21). For that, FDs have a greater chance to know about their patients' ailments and any changes in their health conditions and are acquainted with the vulnerable groups within those families. Therefore, with such privileges, they would be in a more superior position than other health care workers to early detect or suspect cases of COVID-19.

FDs' abilities to help in managing mild cases of Covid-19 at home

Since family medicine is a community-based discipline, the patient-doctor relationship is fundamental to all that it does. With FDs having the opportunity to know more about their patients' present and past medical history, they will be as well more aware of their psychosocial status. In the present time, there are numerous factors playing a role in making home care a necessity and not a luxury, such as aging population, change in family structure from extended to nuclear, change in the disease pattern (more of NCD), increased focus on person-centered care and

need to have efficient and continuous care that extends beyond the facility. In highlighting the importance of home care, Dr. Ian R. McWhinney stated “We define family medicine in terms of relationships, and continuity of the patient-doctor relationship is one of our core values. How can we justify breaking our long-term relationships with patients whenever, in sickness or old age, they become housebound” (22).

During the COVID-19 epidemic, the advantages of the provision of home care are many, and include; avoiding the stress of being isolated in the hospital which may lead to decreased immunity making the patient more susceptible to complications. Additionally, it could avoid the stigma of being a COVID-19 case especially in the culture prevailing in our part of the world. Nevertheless, the corona patients will have a feeling of security by being surrounded by their family members. Appropriate home care could help in reducing or preventing the dissemination of the illness. COVID-19 patients who are discharged from hospital need regular follow up and continuity of care. Such could be offered by the FD through an efficient home care system. The home environment will be ideal to increase the health awareness of the family and the close contacts about COVID-19. Rawaf et al, in supporting home care stated that “Primary care should be structured to deliver more effective services to suspected cases and contacts, as well as continue to provide the vital health care services as the first point of contact within the health system while maintaining a high level of continuity of care. Patients discharged from intensive care require follow-up and primary care should be well-positioned to do so” (23).

FDs have the skills in tracing contacts

Contact tracing is more or less similar to detective work, and to perform that job properly there should be a good doctor/patient relationship and effective patients confidence. The contact tracers who are supposed to interview people with contagious disease (positive COVID-19 test) ought to be well prepared to figure out who they may have lately been in contact with and at what point and time they were mixing with those individuals. They should also have the skills of convincing the suspected to isolate themselves, avoiding the spread of the disease any further. Experience from global countries such as South Korea and New Zealand have proved to be successful due to the forceful utilization of contact tracing in an attempt to control the outbreak (24).

Patrick Howell stated that for efficient contact tracing in the PHC there is a requirement for four main fundamental elements. The first is; recruiting numerous manual tracers; then protection of people’s privacy against any abuse in the utilization of information; ensuring that contact tracing should cover as many people as possible, and finally, it has to be known that technology alone cannot help in contact tracing and cannot replace manual tracers as not everybody possesses smartphones (25).

FDs’ role in psychological support of the patients and their family members

The fourth very important role of FDs during the COVID-19 pandemic is to provide psychological support to the patient’s family members. With some 2.6 billion individuals around the globe in some sort of lockdown condition, it is without a doubt that such a factor is considered a high risk for psychological problems. Moreover, it is well known that having a suspected or confirmed case of COVID-19 in the home or just being isolated in addition to the created social stigma could all form a very stressful situation to the individuals and their family members that may lead to; fear, worry, and stress among the concerned but more in certain groups, such as old people, people with underlying certain health conditions (like NCDs or heart problems) and the care providers. The induced anxiety no doubt has a psychopathological impact on the person and their relatives that may induce depression which in turn could precipitate self-harm or suicidal attempts. Even though the reported important psychological impact to date is elevated rates of stress or anxiety, as new measures and impacts are introduced – especially quarantine and its effects on many people’s routine activities– the levels of loneliness, depression, drug use, and self-harm or suicidal behaviour are also expected to rise (26).

FDs are known to be the most appropriate health care provider to offer support and palliative care to the families during any stressful situation because of their broad knowledge and the long-standing relationship with patients and their families making them aware of the personal attributes of each patient. They are also more familiar with the family members’ interactions during an illness and how that affects the patient’s health. Such provided palliative care depends very much on the medical treatment, the physical, psychological, social and the spiritual care provided (27, 28).

Provision of mass health education and raising public awareness

The FDs and the PHC team are in a better position to provide mass health education to the public to increase their awareness during and post the pandemic since the advice-giving method is part of their role and their professional competencies (29). Subsequently, it is expected from them to do the same during any epidemic or pandemic. It is most important that health care professionals working in PHC institutions acquire the knowledge, experience, and skills to promote health and educate and counsel the families and public, about healthy lifestyle behaviours (30). In this line, many studies have found that there is a strong relationship between health promotion counselling done by the FDs and the indicators of quality of life as reported by AlSayah et al (31).

Risk management and protection of the health care workers

One of the important FD tasks during epidemics is assessing and managing the risk induced by the disease to the health care workers and the community. FDs have the skills, knowledge, and abilities to perform that task.

During COVID-19 many PHC centres in different parts of the world led by FDs made changes in their services and their places of work to respond to this task.

Role in managing aftermath and returning to normality

FDs are the ones expected to manage the aftermath of contingencies (20). They, along with the PHC team could play a critical role in easing the burden of global lockdown adoption. Due to their attributes and their close contacts with the community they have major responsibilities in leading the public to go back to normal life, while adhering to the precautionary measures against the spread or the contraction of the disease. Also, they could stipulate the appropriate measures against the occurrence of the second wave of Covid-19 epidemics. They will as well keep a vigilant eye on the people under their care to continue educating and protecting them against COVID-19 and secure them from getting psycho-emotional problems due to long home confinement.

FDs as a researcher

To know more about Covid-19, FDs and Public health doctors are expected more than other health disciplines to respond to many unknown questions about the coronavirus. They would be at the front line of performing research to overcome any problems that are related to the pandemic and or to protect against the second wave of the Covid-19 epidemic.

Their role in E-medicine and medical digitalization

The health delivery system after COVID-19 will be different from before the pandemic. It is expected that there will be rapid adoption of the digitalization of medicine with fewer patients' physical consultation and less visits to the primary health care centres, in contrast to more over-the-phone or video consultations, more home visits and more e-health or e-medicine. The COVID-19 pandemic, as stipulated by the NHS, UK, has speeded up the timeline long-term plan that was promised to every patient for the right to digital primary care services by the year 2024 (32).

WHO defines e-Health as "the cost-effective and secure use of Information and communications technologies in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education, knowledge and research" (31). Clinical applications of e-Health include Electronic Health Records, TeleConsultations, Clinical Decision Making Support Systems, Vital Signs Monitoring Services, TeleHomeCare, Ambulatory e-Health—smart clothing, e-Wear, e-Clothing, e-Prescribing, e-Nursing, e-dissemination of personalized healthcare and professional Continuing Education using e-Learning tools (32).

Since, PHC is the care that is based on disease prevention, early detection and safeguarding the public, the health system should be restructured in a way that a healthy nation is ensured. However and unfortunately, many countries before the COVID-19 Pandemic have been considering seriously the concept of privatization of

health services which could have had a disastrous impact during this crisis if it was implemented.

Finally, PHC in addition to community medicine, which aims at studying the nature of the illness and the characteristics of its causative agent, are both vital for the protection of the health of the whole nation. The recent crisis has indicated how significant both are in being a safeguard for the entire community against the devastating effect of Covid-19. That was reflected by the swift execution of measures for the containment of the disease. Therefore, they both ought to be the foundation of any health system offered to the public. The late Barbara Starfield stated "Family Medicine should always shape the health services reform and Not Vice Versa. And Family physicians have to be at the forefront of any health care reform". Due to that, it is recommended that Fifty percent of any physicians' workforce in any country should be constituted of Family Doctors (35). Policy makers have to be convinced that any long term investment in PHC will pay off as there are many successful stories in this line, such as in Sri Lanka which built its health system on a strong base of PHC that has led to a rise in life expectancy and reduction in mother, infant, and child mortality rates (36).

Conclusion

FDs and PHC teams have an extraordinary role in any health disaster including the COVID-19 Pandemic. Because of their close relationships with family members, they are expected to be safe-guards helping the community and taking measures to decrease the spread of infection and its unfavourable consequences. It is notable that to develop a solid well-developed nation, governments must ensure the provision of three fundamental services that must not be endorsed to any third party; health, education, and housing. Since a healthy population is the aim of any governmental services, such service should take the priority and be built on a strong foundation of primary health care services.

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