

Review Article

Impact of COVID-19 pandemic on chronic diseases care follow-up and current perspectives in low resource settings: a narrative review

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Abstract: Coronavirus is a respiratory disease that spreads globally. The severity and mortality risk of the disease is significant in the elderly, peoples having co-morbidities, and immunosuppressive patients. The outbreak of the pandemic created significant barriers to diagnosis, treatment and follow-up of chronic diseases. Delivering regular and routine comprehensive care for chronic patients was disrupted due to closures of healthcare facilities, lack of public transportation or reductions in services. The purpose of this narrative review was to update how patients with chronic care were affected during the pandemic, healthcare utilization services and available opportunities for better chronic disease management during the pandemic in resources limited settings. Moreover, this review may call to the attention of concerned bodies to make decisions and take measures in the spirit of improving the burden of chronic diseases by forwarding necessary recommendations for possible change and to scale up current intervention programs.

Keywords: COVID-19, chronic diseases, follow-up care, impact, low resource settings

Background

Corona virus disease 2019 (COVID-19) is a respiratory disease caused by a novel coronavirus called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) [1, 2]. It is a big family of viruses that have been obtained since 1965 and currently COVID-19 have been emerged to infect humans. These viruses have three genotypes of alpha, beta, and gamma. This virus is named a zoonotic disease since it originated from animals and birds [3]. Besides increased fatality rates of the disease, coronavirus has a great impact on the mental health of the community and healthcare workers as the result of its fears [4]. Globally, chronic dis-

eases are the leading cause of disability and death [5, 6]. Hypertension, diabetes, asthma, chronic obstructive pulmonary disease (COPD) and cancer are among the top comorbidities with COVID-19 [7-9].

COVID-19 can infect people of different ages, particularly affecting the elderly age group. In addition, people with underlying co-morbidity and immunosuppressive appeared to be more susceptible to severely ill and a higher risk of death [10-13]. World Health Organization (WHO) has recommended that patients with co-morbidity and weekend immunity should be better protected from infection without discrimination. Irrespective of the disease prognosis, patients

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presenting with different co-morbidities have a high risk for the severity and complications of the disease [13-15].

The COVID-19 pandemic affected the processes of routine comprehensive care for chronic patients due to disrupted delivery care [16]. In person physical face-to-face consultations had ceased due to government restriction, greater instilled fear and focus shifted toward COVID care. In addition, patients have less chance for community-based support and care [16, 17]. Worldwide, the pandemic adversely affected clinical decision-making by limiting laboratory testing and physical examination [18, 19]. During the outbreak of the pandemic hospitalization rate, emergency department visits and inpatient clinic visits of chronic diseases were significantly reduced [17].

This disruption of care has a long-lasting impact on chronic health outcomes that likely surpass the duration of the COVID-19 pandemic. However, the questions of why patients with chronic diseases are more vulnerable to SARS-CoV-2, and what interventions should be taken to reduce the risks are open. An evidence-based update on the impact of COVID 19 on chronic illness patients plays a paramount role for the implementation and evaluation of treatment strategy for patients having chronic diseases in low- and middle-income countries (LMICs). The purpose of this narrative review was to update how patients with chronic care were affected during the pandemic, healthcare utilization services, magnitude of factors and the ways forward for better chronic disease management during Covid-19 in resources limited settings.

Global burden of chronic diseases

The majority of the chronic diseases are silent killers. According to the WHO report of 2018, the mortality of 63% was recorded related to chronic diseases like heart disease, diabetes, cancer, and respiratory disease [20, 21]. Currently, the worldwide mortality from non-communicable diseases (NCDs) remains unacceptably high. By 2030, NCDs will contribute to three-quarters of all worldwide deaths [22].

The impact of these chronic diseases is also becoming increasing in low-income countries. Over 80% of heart disease and diabetes deaths, and almost 90% of deaths from chronic

obstructive pulmonary disease occur in LMICs. Heart disease is the primary global cause of mortality, and it was estimated that more than 17.3 million deaths per year [23]. According to WHO, from a mortality rate of 38 million people reported per year from chronic disease, about 14 million deaths were occurring in the age ranges of 30-70 years, of which 85% is in developing countries.

The presence of at least one comorbidity is estimated to be 20%-51% of COVID-19 patients, while the proportion increases to 50-80% in patients with severe conditions [8, 9, 24].

COVID-19 patients presented with hypertension, diabetes, and coronary heart diseases are more likely to be progressed to the severe conditions [25, 26]. COVID-19 patients having cardiovascular diseases (CVDs) are associated with a higher risk of mortality [27]. Routine care for chronic diseases during the pandemic is the most challenging [15].

Chronic diseases like HIV, diabetes and kidney diseases are immunosuppressing cases, making patients are more vulnerable to infections. These patients with the COVID-19 are less likely to be cured [28, 29]. COVID-19 is one of the leading causes of heart disease and responsible for about 5% of the cases of acute heart failure. Therefore, the mortality rate of COVID-19 patients with a history of CVD is high [12, 30].

Patients with asthma and chronic obstructive pulmonary disease (COPD) are more likely to have different risks of severe COVID-19, which may be related to different ACE2 receptor activation [24]. For better outcomes and monitoring, chronic disease patients must receive effective and timely access [31]. Additionally, patients having chronic disease require continuous follow-up to manage their disease [15].

Psychological impacts of COVID-19

“Coronaphobia”, which is the fear of COVID-19 has become an emerging issue among different communities and healthcare workers [4]. Stress is one of the mental health disorders that occurred as the result of the COVID-19 outbreak. Society has developed fears for themselves and their families, manifesting feelings

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of helplessness, boredom, loneliness and depression [32-34].

Mental health impacts such as anxiety, stress, and depression were common as the results of the COVID-19 pandemic [35, 36]. It was estimated that about of 80% patients' mental health was affected during the pandemic [15]. Lack of appropriate treatments for the virus has also increased anxiety. In the majority of the patients, these anxiety symptoms do not reach diagnostic thresholds for a DSM-5 [37].

The presence of anxiety, worry, uncertainties and stressors in the community can result in long-term consequences, including deterioration of social networks, stigma, possible higher emotional state and other negative outcomes [32-34, 37]. COVID-19 could also possibly increase psychosis, mood disorder, sleep disturbance, phobia and panic disorder [37, 38].

Compared to the general population, patients presenting with psychological co-morbidity are more likely to be affected by different negative mental outcomes like post-traumatic stress disorder, depression, and mood disorders [39]. Reducing media that raises the issues of coronavirus is recommended to decrease the risk of psychological stress.

The COVID-19 has also increased stigma against people of certain ethnic backgrounds and peoples suspected to have contact with COVID-19 patients. The stigma could undermine social relationships and increase social isolation. As the result peoples hide their disease due to fear of stigma, prevent people from seeking health care immediately, and are disappointed to adopt healthy behaviors [32-34, 40, 41].

In one study, COVID-19 had caused an abnormal psychological impact in 22.8% (95% CI: 18.6-27.1) of chronic disease patients [42]. Patients who had no social support and living alone were more likely to have psychological problems compared to those who had good social support. To prevent COVID-19 impact on those who had no social support and living alone, behavioral therapy like relaxation exercises, counseling and entertainment are beneficial [42].

Economic impacts of COVID-19 on the health-care system

Globally, the COVID-19 pandemic has affected the health care budget resource [43]. This pandemic resulted in the stigmatization of affected individuals, authority figures, and health care professionals [44]. The social discrimination of infected peoples hindered international trade, finance and relationships, instigating further unrest [4].

Currently, COVID-19 becomes one cause of the economic crisis besides being declared as a public health emergency. Containment and mitigation measures are needed to limit the economic shutdown especially in LMICs where there is lower health care capacity, shallower financial markets, less fiscal space and poorer management [45].

Chronic diseases are influenced by a range of individual, social and economic factors, including our perceptions and behavior. Thus, due to the silent nature of the diseases, NCDs tend to be easily overlooked by individuals and policy-makers [46]. As COVID-19 became spreading, the physicians have delayed in the management of chronic disease due to the fear of pandemics [4, 43, 45].

The healthcare costs from NCDs are high and projected to increase. Significant costs to individuals, families, businesses, governments, and health systems add up to major economic impacts. Cardiovascular disease, stroke, and diabetes cause billions of dollars per year [20]. Healthcare systems in LMICs are mainly affected by COVID-19 due to the unorganized health care system. Before the COVID-19 pandemic, healthcare systems in LMICs faced considerable challenges in providing high-quality, affordable, and universally accessible care. These health systems had limited financial resources, inadequate health care providers, and inadequate drugs [39, 43, 45, 47].

From all global regions, the magnitude of infectious diseases like tuberculosis and HIV/AIDS is found to be high in Africa. Limited health care services, high dependency, weak economic systems to sustain health and lockdown costs are some factors responsible for higher risk of harm [48, 49]. Hence, continued care for chron-

ic disease patients is paramount agenda to decrease the mortality and psychological impacts despite the pandemic [15].

The impact of COVID-19 on follow-up and care

Patients with chronic diseases require regular disease management and close follow-up to reduce risks of adverse health outcomes [17]. Resources at different resources are re-allocated from chronic disease prevention, diagnosis, management, and rehabilitation during the outbreak. The lockdown of different services also decreased referral, access and hospitalization resulting in inadequate ongoing care for chronic conditions among needy patients [16, 17].

As the results of COVID-19 on the health care system, patients needing chronic follow-up postponed their follow-up. Medical mistrust results in inappropriate use of resources and inadequate management of the disease. Moreover, medical mistrust can result in stigma and decreases their adherence [37, 38].

Different common reactions like a decrease in health care services other than the pandemic disease negatively affected the outcomes of chronic diseases [36]. Even patients following their medications, inappropriate counseling information leads to irrational drug use and drug interactions [50].

Noncompliance with drug therapy is the most public health challenge. In Europe, it has been estimated that 9% of cardiovascular events can be attributed to non-adherence [51]. Non-adherence is likely to happen due to the far distance of the patients from the health facilities to take their medications [52, 53]. As the results of distant health facilities, patients with chronic diseases find it difficult to follow up with their therapy [52]. Therefore, regular visits and evaluations of the patients becoming more challenging and difficult to practice [39].

Comorbidities in chronic disease patients are great challenges in public health among developing countries [54]. The shortage of medicines, diagnostic equipment and the absence of treatment guidelines are major challenges [46]. Routine health care reports are incomplete and erratic. There is insufficient knowledge of the epidemiological transition of chronic diseases. For severely ill patients, lockdown

may impact patients requiring regular treatment and follow-up [55]. Suggested solutions like social distancing and lockdowns to combat the pandemic also greatly affected patients having chronic diseases who are difficult to access to hospitals for needing support [43].

Expert opinion

Worldwide, the COVID-19 is placing a big problem on health care systems. Patients with low immunity systems like chronic disease patients are more prone to higher morbidity and mortality. As a result of the unorganized health care system in developing countries, the management of the COVID-19 pandemic in these countries need special attention.

Patients with chronic diseases contribute to a considerable proportion of the whole population, and appropriate management of comorbidities is of great significance in mitigating the COVID-19. Efforts should be made by health-care systems, medical institutions, and government during the difficult situation.

Giving strong focus and providing critical data on unknown effects of the pandemic is indispensable to formulate evidence-based approaches to its management. Enhancing the knowledge of the disease and legal approaches, can increase healthy behaviors and reduce the incidence of major chronic diseases in LMICs. There is a need to re-orient the national health system to ensure recognition of the chronic disease burden and sustain political commitment, allocate sufficient funding, and improve the delivery of chronic disease services at any health care level.

Different factors like the non-availability of drugs, poor diet adherence and lack of social support need to be taken into consideration in managing chronic health conditions in future pandemics because if immediate action is not taken, the economic impact of the disease could rise.

To prevent the psychological impact of the COVID-19, appropriate management should be urgently established by the government, health care personnel and other stakeholders. Developing advanced health care technologies that assist health care professionals is paramount to continue routine appointments.

Utilization rates of telehealth have increased during the pandemic period. This improved patient satisfaction, more effective routine disease monitoring, and increased treatment compliance. But still, the issue of knowledge, resources, internet accessibility, and ability in surfing the internet facility among resource-limited settings is challenging. Facilities and countries which have the facility and medical service processes should continue online, by phone, or by E-mail.

Current directions and perspectives

The coronavirus has clearly shown us how a “virus” negatively affected our lives in the 21st century and simultaneously lead us to assure that the greatest assets of mankind are health, peace, love, solidarity, ingenuity, and knowledge [4].

People living with or affected by NCDs should continue to take their medication and follow medical advice, secure a one-month supply of your medication, or longer if possible [11, 13]. All people living with the human immune virus (PLHIV) should take antiretroviral treatment (“treat all”) no more than seven days after confirmation of the diagnosis of HIV infection (“rapid initiation”), including same-day initiation if willing and eligible. Maintaining a good adherence to antiretroviral treatment (ART) can decrease viral suppression and increase immunity to reducing the risk of complications in case of infection with SARS-CoV-2 [56, 57].

Patients having TB should follow the instructions given by their health care providers to combat the progress of their disease. Patients present with both TB and COVID-19 show similar symptoms such as cough, fever, and difficulty breathing. Also, both diseases attack primarily the respiratory system and they are transmitted mainly via close contact [40, 41].

Some countries were providing services by the virtual-care framework using telehealth for more effective routine disease monitoring and improved patient satisfaction [17]. The community, health professionals, government, non-governmental organizations, and researchers should contribute to preventing the health-care impact of COVID-19 on chronic disease patients.

Further, the use of apps can support the self-management of chronic conditions, like self-management of blood glucose and blood pressure. Finally, we recommend further investigation by voluntary researchers to carry out an extensive study to overcome the challenges and impacts of COVID 19 on chronic illness patients. Hopefully, this way, we can curtail and overcome the detrimental impact of delayed care on health outcomes for patients suffering from chronic diseases.

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Abbreviations

COVID 19, Coronavirus disease 2019; CVD, Cardiovascular diseases; HIV, Human immune virus; LMICS, Low- and middle-income countries; NCCD, Noncommunicable chronic diseases; NCD, Non-communicable diseases; TB, Tuberculosis; WHO, World Health Organization.

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