

## The COVID-19 Paradox and Exit Strategy for Nepal

Rahul Kumar Thakur<sup>1</sup>, Rajshree Singh<sup>2</sup>, Gambhir Shrestha<sup>3</sup>, Swotandra Gautam<sup>1</sup>, Sunil Kumar Singh<sup>2</sup>

### Author Info:

<sup>1</sup>B.P. Koirala Institute of Health Sciences, Dharan, Nepal

<sup>2</sup>Nepalese Army Institute of Health Science- College of Medicine, Kathmandu, Nepal

<sup>3</sup>Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University, Kathmandu, Nepal

### Corresponding Author:

Dr. Rajshree Singh



Email/Contact:

dr.singhrajshree@gmail.com

### ABSTRACT

Nepal's challenges in combating the COVID-19 pandemic include a fragile economy, inadequate preparedness, open borders with India, and China. So far, Nepal has a toll of 22972 cases with 75 deaths as of August 10, 2020. Although, certain postulates like innate factors and the difference in virulence among different strains may have some protective effect as shown by the mild clinical picture in COVID-19 affected Nepalese citizens; the escalation of the daily number of cases is very alarming when the active cases in most of the countries are decreasing. So far, the cases have an increasing trend which shows that the government's strategies are not working in favor of limiting the disease. This paper reviews how Nepal is tackling pandemic, comparing its strategy with the global scenario and reviewing efficiency of our previously adopted measures with an aim to understand the paradox of unique trend of pandemic in the South Asian region. With unsatisfactory results of current steps and injured economy, Nepal needs revise its strategy especially addressing the areas that need strengthening and incorporate this with the current re-opening plans as we move towards normalcy. Therefore, the government needs to come up with effective strategies including mitigation, preparedness, response, and recovery to manage this global pandemic in the future.

**Keywords:** COVID-19, Novel coronavirus infection, Quarantine, pandemic, Nepal

Quick Response (QR) Code	Article Info		
<p>Scan Me for Full Text</p>  <p> View PDF</p>	<b>Received:</b> 27 July 2020;	<b>Accepted:</b> 26 August 2020;	<b>Published Online:</b> 27 August 2020
	<b>How to cite this article in Vancouver Style?</b>		
	Thakur RK, Singh R, Shrestha G, Gautam S, Singh SK. The COVID-19 Paradox and Exit Strategy for Nepal. <i>Europasian J Med Sci.</i> 2020;2(Covid-19 Special Issue): 91-96. <a href="https://doi.org/10.46405/ejms.v2i2.134">https://doi.org/10.46405/ejms.v2i2.134</a>		
<b>Disclaimer</b>			
<b>Conflict of Interest:</b> None Declared;		<b>Source of Support:</b> Nil	
<b>Copyright:</b> © 2020 by author(s). This is an open access article distributed under the terms of the <a href="http://creativecommons.org/licenses/by/4.0/">Creative Commons Attribution International License 4.0</a> ( <a href="http://creativecommons.org/licenses/by/4.0/">http://creativecommons.org/licenses/by/4.0/</a> ) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.			
<b>Publisher's Note</b>			
The Europasian Journal of Medical Sciences (EJMS) ( <a href="http://www.europasianjournals.org">www.europasianjournals.org</a> ) is an official Journal of Nirvana Psychosocial Care Center & Ressearch Institute ( <a href="http://www.nirvanapscc.com">www.nirvanapscc.com</a> ). The Journal as well as publisher remain neutral with regards to any jurisdictional claims in any published articles, its contents and the institutional affiliations of the authors.			

## INTRODUCTION

The World Health organization declared COVID-19 as an outbreak of 'public health emergency of international concern' on 30 January 2020 and a 'pandemic' on 11 March 2020.<sup>1</sup> The pandemic cumulated to 19.7 million cases spread across 213 countries and territories with 720,000 confirmed deaths by August 10, 2020.<sup>1</sup> Nepal is a landlocked country sharing borders with two most populous countries, India and China. In the north, Nepal shares the border with China which is the epicenter of the pandemic and on the other three sides, an open border is shared by Nepal with India which is seeing an increasing number of cases every day.

The Government of Nepal imposed nationwide lockdown on 24 March 2020. The lockdown was effectively implemented throughout the nation and lasted 58 days till June 15, 2020; after which the government made a five-phase reopening plans. We present the appraisal of Nepal's effort in curtailing the pandemic, scenario of the trend of pandemic in the south Asian region and the possible exit strategy for Nepal.

### Situation analysis of COVID-19 pandemic in Nepal and the South Asian region

In Nepal as of August 10, 2020, there are 22972 confirmed cases, 6544 cases are active cases with 75 deaths so far (Figure 1).<sup>2</sup> The first confirmed imported case in Nepal was a 32-year-old male student, studying in Wuhan, China who returned on January 9 in Nepal.<sup>3</sup> Initially, there was a slow escalation of cases toward the end of March with the first case of local transmission being confirmed on April 4. The number of cases significantly increased in June, after the influx of migrant labor workers from India. Nepal is slowly catching up on case detection and management with a total of 37 testing centers; and setting up makeshift quarantine camps, COVID-19 clinics and hospitals. The total number of reverse transcriptase -polymerase chain reaction (RT-PCR) done is 4,43,804 as of August 10 in Nepal.<sup>4</sup> Currently approximately 11,038 people are quarantined in the specialized area.

The total population of South Asia is 1.94 billion, which is approximately one-quarter of the total world's population. The South Asian region, which comprises low to middle-income countries like India, Nepal, Sri Lanka, Pakistan, Bangladesh, Bhutan, Maldives, and Afghanistan is very densely populated. However, as of August 10, South Asia had reported a total of only 28,25,355 confirmed

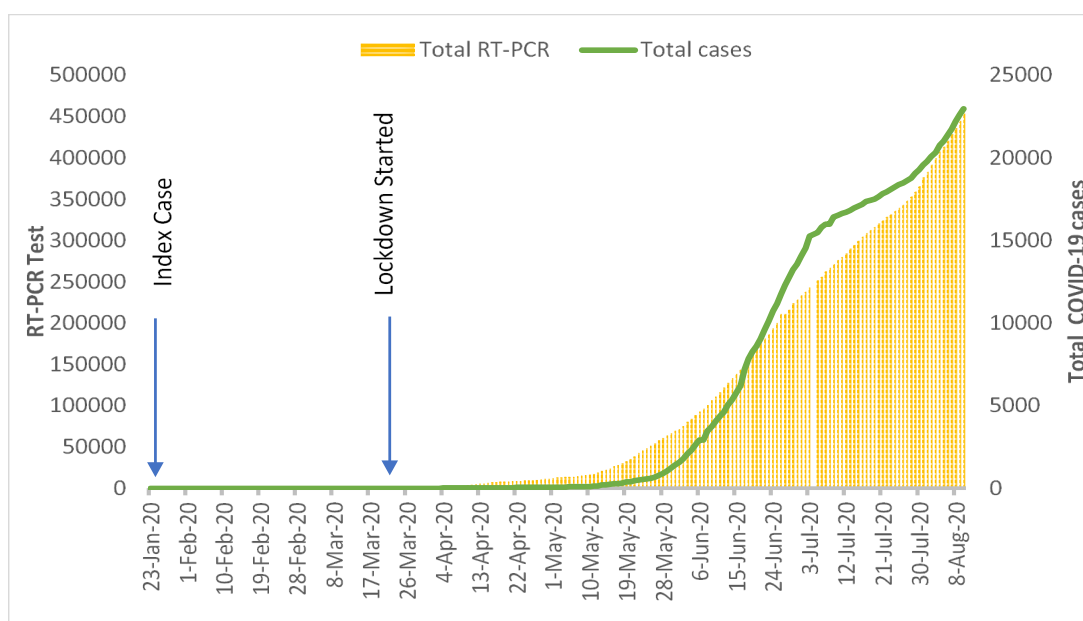


Figure 1: Trend of RT-PCR testing and total COVID-19 cases in Nepal<sup>4</sup>

cases and 54,931 deaths, accounting for just 14.3 % of global infections and 7.6% of world fatalities.<sup>5</sup> The South Asian countries have an estimated 0.7-2.8 critical care beds available per 100 000 population .<sup>6</sup> India and Nepal initiated lockdown just a week apart but since then, the cases in India have escalated very rapidly.<sup>7</sup> The largest nations among the SAARC, India has the highest number of cases followed by Pakistan and the least number of cases in Bhutan and Sri Lanka (Fig. 2). Maldives have highest number of total cases per million, followed by India, Bangladesh, Pakistan, Afghanistan, Nepal, Bhutan and Sri Lanka. Despite Nepal facing a shortage of testing kits, approximately 15.52 people are tested per 1000 people as of Aug 10, 2020. (Fig. 3).

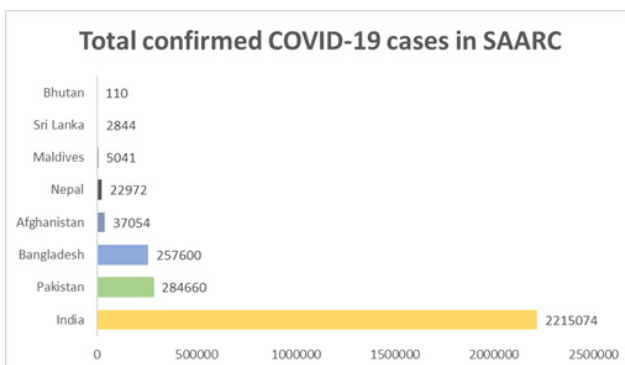


Figure 2: Total confirmed COVID-19 cases in South Asian nations, data till August 10,2020.<sup>5</sup>

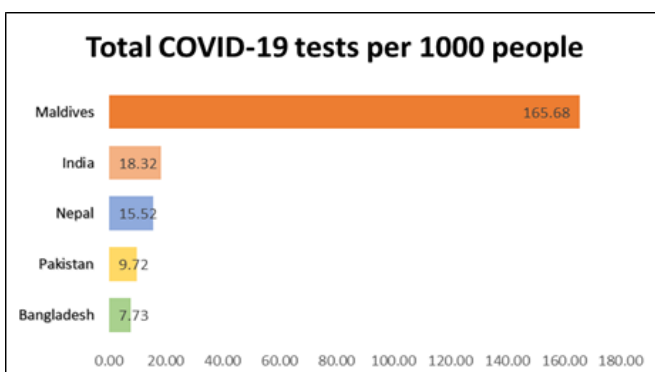


Figure 3: Total COVID-19 tests per 1000 people in South Asian nations, data from August 10 ,2020.<sup>5</sup>

### Solving the paradox

- The immunity hypotheses

The severity of disease presentation in Nepal has been clement compared to the rest of the world with a 0.2% fatality rate in Nepal as compared to the global average of 4.8%. The Nepalese customs such as greeting by “Namaste”, taking off shoes outside the room may have also contributed to some level of prevention against this virus. Certain postulates like innate factors, BCG vaccine, lack of closed ventilation system, low air travel frequency, and the difference in virulence among different strains of COVID-19 may have been working as a protective factor for countries like Nepal.<sup>8</sup> This trend of mild disease also raises the question whether biologic factors like virology, host factors like innate immunity and genetic makeup and environmental or physical factors play in the low to middle-income countries to have contributed to a low burden of morbidity and mortality as compared to countries in Europe and North America.<sup>9</sup> This can also be a topic for research interest for epidemiological and genetic experts.

- Were the testings enough?

The efforts made by Nepal during the pandemic includes nation-wide lockdown, social distancing, the establishment of isolation sites, mobilization of human resources for case finding, contact tracing, and monitoring. Formation of contact tracing and testing teams at different levels from central to the municipality level have intensified case finding and subsequent effective contact tracing. The increment in testing capacity from mid-May unraveled an alarming rate on increase in the daily number of cases. It is important to ask ourselves if the testings are enough because testing not only help in the case detection but also helps us understand the level of threat we are facing and more importantly the effectiveness of our preventive measures. Nepal has one of the highest testing per 1000 people rate but it also has one of the highest positive cases per 1 million people rates. Despite an increase in testing capacity, globally our number is still a low testing rate.

- Was nation-wide lockdown an effective strategy?

Nepal initiated lockdown in the early stage of the pandemic which makes us question if the lockdowns are effective at all or if we imposed these restrictions too soon. During this period, measures like shutting down of the only international airport

in the country, provision for fever clinics and designated COVID hospitals were taken into effect by Nepal. This lockdown should have been an opportunity for the government to act and prepare the health-care system with sufficient personal protective equipments, testing kits, and equipping critical care units. The answer to when is it the right time to resume normalcy can be difficult because there is no hard evidence to support the absence of existing community spread. The world will need more time to recover from this pandemic as it doesn't have treatment or the effective vaccines against this virus, which is why we cannot afford to further lengthen the period of shutdown. Until the aforementioned hypotheses are confirmed what we know so far is that endorsing strict implementation of lockdown strategy may not be the complete solution to tackle this pandemic, as it only pushes the next stage of pandemic into the future but will not prevent them.<sup>10</sup>

### Exit Strategy for Nepal

The time is very crucial for the government to formulate and implement effective strategies for managing the global threat implementing traditional disaster management cycle which includes establishing preparedness, mitigation, response and recovery plans with uniqueness and modernity tailored specifically for this pandemic.<sup>11</sup> The exit strategy for Nepal is to learn from its own performance evaluation rather than adopting and modifying model strategies from other nations. The strategies should focus on following headings:

#### 1. Evaluate the current health resources and antedate the surge

Approximately, 20% of people infected with COVID-19 require hospitalization and around 5% of total infected require intensive care to manage severe respiratory problems. The natural history of this disease in high-risk groups like elderly and those with comorbidities can be fatal with rapid worsening and even progression to death.<sup>12</sup> In the contemporary emergency, it is ostensible that there is likely to be an extensive gap among demand and accessibility of hospital, critical care facilities, ventilators, skilled healthcare workers, PPEs. For example, in Nepal, even if we contemplate 0.1% of the population gets infected over the next 60 days, and 5% of those diseased need critical care, we need intensive care unit beds for 1400 people. While this is a naive calculation which accepts 0.1% infection rate, with a higher infection rate of 1%, the numbers of ventilators required will increase by multiple folds. As of now Nepal does not have

that capacity for intensive care unit.<sup>13</sup> Even, if we obtain/buy ventilators, we will still lack the required healthcare workers for running these sophisticated centers.

#### 2. Redesign and Reallocate Clinical Resources for New Environments

The government should partner with private-sector facilities to rapidly establish widespread diagnostic capacity and intensify active surveillance for early case contamination. With availability of limited resources and worldwide shortage, the so-called "hot-spots" needs to be identified. While international airport and high population density puts the capital in the risk of exposure; cities in the southern borders are still vulnerable. Government should identify these areas and decentralize its efforts to expand services out of valley. While central governance and coordination in national level is required but provincial administration should be mobilized for micro-planning and taskforce supervision. So far, expanding testing areas and quarantine facilities nationwide has already addressed our immediate needs but quality is unchecked due to inadequate regulation. The exposure in any form like quarantine, referral or burials puts threat to the entire community, hence the local administration should allocate designated triage centers to assess any individuals with a fever or respiratory symptoms, monitor quality control of quarantine centers and train workforce for proper COVID-19 related death management.

#### 3. Address the urgent health burden

COVID-19 has shown to have a multi-organ impact and most deaths are seen in patients with comorbidity due to a failure to seek necessary urgent care. People are underdiagnosed because due to low testing rates and factors like lockdown, stigma, lack of awareness and geography withholding people from visiting hospitals. In Nepal, people still die of preventable illnesses like diarrhea and malnutrition, hence this pandemic rather a new threat than more of a fatal one. COVID-19 may have stolen the spotlight away from all the other public health concerns but, some of the important health issues requiring immediate concern are Mental health: Loneliness, depression and anxiety has increased because of social isolation and lockdown.<sup>14</sup>

There has been a substantial increase in cases of suicide in Nepal. The healthcare workers dedicated to pandemic have witnessed a lot of fatigue which can adversely affect their performance and even



leave a long-term effect on their mental well-being. Another social issue is domestic violence which needs to be addressed, as there has been a number of reported cases during lockdown.

**Pregnancy and Malnutrition:** The lockdown has affected the economy by increasing poverty and unemployment rates. The people of low socioeconomic status have suffered the most from this pandemic. There has been a compromise in the maternal and child health; for instance, maternal mortality has increased amidst the pandemic<sup>15</sup>.

**Chronic disease management and Dialysis:** People with chronic non-communicable disease as comorbidities are most severely affected with this virus. The patients visiting primary care have significantly decreased and there has been widespread terminations of elective surgery which has spiked deaths due to other causes as well. The proper arrangement of transportation and accommodation facilities along with continuous in-patient and out-patient services for these patients should not be compromised.

#### **4. Implement Aggressive Measures to Prevent Community Transmission**

While the community spread of this virus is still a national debate among experts. Regardless of ongoing dispute, it is best for country like ours to be prepared for Stage 3 of the pandemic. Our goal should be decreasing the transmission number, or R0 to below 1, so that each infected person spreads the disease to fewer than one other on average. The lockdown has proven to be partially effective but it is not a sustainable measure. We need to implement measures like 3W's which are

**Watch your distance:** The physical distancing measures adopted by people in UK have significantly reduced R0 from 2.6 prior to lockdown to 0.62 after the lockdown, based on all types of contact.<sup>16</sup> Focusing on easy measures like these which will have a substantial impact and a decline cases in the coming weeks.

**Wear a mask:** The Government of Nepal should compulsorily plan to use universal face masks in public. There have been several benefits of this technique to prevent spread of disease in the community.<sup>17</sup>

**Wash your hands:** Rigorous hygiene promotion (cough etiquette and hand washing) and facility of hand sanitizer in public settings to combat disease.

#### **5. Border controls with high-quality quarantine for immigrants**

New Zealand did this effectively and they were very

successful to contain new cases and prevent surge in community.<sup>18</sup> Considering the entry of high-risk Nepalese citizens from different countries, incidence of cases is likely to increase rapidly. Nepal needs to ramp up its strategies and come up with a definitive sustainable plan for its forthcoming challenges.<sup>19</sup> The quality of the quarantine areas has been controversial with death in quarantines stealing the headlines and has discouraged symptomatic people to seek medical attention. Thus, the quality of these makeshift quarantines centers made in schools and camps needs to be improved.

#### **6. Enhancing research and using latest technology**

As compared to the 1912's Spanish flu pandemic, the biggest advantage we have today is science and technology. If applied effectively, we can ease the social distance with development of mobile application to trace the users.<sup>20</sup> Implementing tele-education will help continue access to the education can help decrease unnecessary movement among people.<sup>21</sup> Tele-health technology can be used to treat people in urban settings, so as to provide effective outpatient treatment.<sup>22</sup> Researches about the disease transmission pattern, clinical spectrum of disease and impact of prevention and response measure in low-middle income countries should be increased.<sup>23</sup> Lastly, more investment in the health care and related infrastructure to combat COVID-19 should be done which can serve as a model for future pandemics management as well.

With the lockdown re-opening and citizens trying to restore normalcy, the government has started five phases of re-opening. The pandemic is far from over and the threat of community spread continues without the advent of the vaccine. Thus, incorporating aforementioned visions along with gradual well-implemented re-opening should be the strategy of Nepal to get back to normalcy.

#### **Acknowledgments**

We thank Prof. Dr. Sanjib Kumar Sharma for his valuable contribution and insights regarding improving content of this article.

#### **REFERENCES**

1. WHO. Coronavirus (COVID-19) events as they happen. Accessed July 4, 2020. [\[Link\]](#)
2. Ministry of Health and Population. Health Sector Emergency Response Plan- COVID-19 pandemic. Government of Nepal, 2020. Accessed July 4, 2020. [\[Link\]](#)

3. Shrestha R, Shrestha S, Khanal P BK. Nepal's First Case of COVID-19 and public health response. *J Travel Med.* 2020;35(3):6-14. <https://doi.org/10.1093/jtm/taaa024> [Google Scholar] [PubMed] [Full-text]
4. Ministry of Health and Population. Health Sector Response to Novel Coronavirus Disease (COVID-19) .Situation Report#1\_28 Jan 2020 to 182\_ 10<sup>th</sup> August 2020. Accessed August 14 2020.[Link]
5. World Health Organization (WHO). Coronavirus disease 2019 (COVID-19) Situation Report – 203. Accessed August 14, 2020. [Link]
6. Phua J, Faruq MO, Kulkarni AP, et al. Critical Care Bed Capacity in Asian Countries and Regions. *Crit Care Med.* 2020;48(5):654-662. <https://doi.org/10.1097/CCM.0000000000004222> [Google Scholar] [PubMed]
7. Tomar A, Gupta N. Prediction for the spread of COVID-19 in India and effectiveness of preventive measures. *Sci Total Environ.* 2020;728:138762. <https://doi.org/10.1016/j.scitotenv.2020.138762> [Google Scholar] [PubMed] [PMC]
8. WHO. Bacille Calmette-Guérin (BCG) vaccination and COVID-19 Scientific Brief.. Accessed July 3, 2020. [Link]
9. Al-Tawfiq JA, Leonardi R, Fasoli G, Rigamonti D. Prevalence and fatality rates of COVID-19: What are the reasons for the wide variations worldwide? *Travel Med Infect Dis.* 2020;35:101711. <https://doi.org/10.1016/j.tmaid.2020.101711> [Google Scholar] [PubMed] [PMC]
10. Mohamed K, Rodríguez-Román E, Rahmani F, et al. Borderless collaboration is needed for COVID-19; a disease that knows no borders. *Infect Control Hosp Epidemiol.* 2020:1-7. <https://doi.org/10.1017/ice.2020.162> [Google Scholar] [PubMed] [PMC]
11. Khadka S, Hashmi FK, Usman M. Preventing COVID-19 in low- and middle-income countries. *Drugs Ther Perspect.* 2020:2-4. <https://doi.org/10.1007/s40267-020-00728-8> [Google Scholar] [PubMed] [PMC]
12. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet (London, England).* 2020;395(10229):1054-1062. [https://doi.org/10.1016/S0140-6736\(20\)30566-3](https://doi.org/10.1016/S0140-6736(20)30566-3) [Google Scholar] [PubMed] [PMC]
13. Paneru H. Intensive care units in the context of COVID-19 in Nepal: current status and need of the hour. *J Soc Anesthesiol Nepal.* 2020;7(1 SE-View Point). [Google Scholar] [Full-text]
14. Singh R, Baral KP, Mahato S. An urgent call for measures to fight against increasing suicides during COVID-19 pandemic in Nepal. *Asian J Psychiatr.* 2020;54:102259. <https://doi.org/10.1016/j.ajp.2020.102259> [Google Scholar] [PubMed] [PMC]
15. Panthi B, Khanal P, Dahal M, Maharjan S, Nepal S. An urgent call to address the nutritional status of women and children in Nepal during COVID-19 crises. *Int J Equity Health.* 2020;19(1):87. <https://doi.org/10.1186/s12939-020-01210-7> [Google Scholar] [PubMed] [PMC]
16. Jarvis CI, VanZandvoort K, Gimma A, et al. Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK. *BMC Med.* 2020;18(1):124. <https://doi.org/10.1186/s12916-020-01597-8> [Google Scholar] [PubMed] [PMC]
17. Sunjaya AP, Jenkins C. Rationale for universal face masks in public against COVID-19. *Respirology.* 2020;25(7):678-679. <https://doi.org/10.1111/resp.13834> [Google Scholar] [PubMed] [PMC]
18. Baker M, Kvalsvig A, Verrall AJ, Telfar-Barnard L, Wilson N. New Zealand's elimination strategy for the COVID-19 pandemic and what is required to make it work. *N Z Med J.* 2020;133(1512):10-14. [Google Scholar] [PubMed] [Link]
19. Acharya KP. Resource poor countries ought to focus on early detection and containment of novel corona virus at the point of entry. *Clin Epidemiol Glob Heal.* March 2020;10.1016/j.cegh.2020.03.001. <https://doi.org/10.1016/j.cegh.2020.03.001> [PubMed] [PMC]
20. Show evidence that apps for COVID-19 contact-tracing are secure and effective. *Nature.* 2020;580(7805):563. <https://doi.org/10.1038/d41586-020-01264-1> [PubMed]
21. Atreya A, Acharya J. Distant virtual medical education during COVID-19: Half a loaf of bread. *Clin Teach.* June 2020;10.1111/tct.13185. <https://doi.org/10.1111/tct.13185> [Google Scholar] [PubMed] [PMC]
22. Ali NA, Khoja A. Telehealth: An Important Player During the COVID-19 Pandemic. *Ochsner J.* 2020;20(2):113 LP - 114. <https://doi.org/10.31486/toj.20.0039> [Google Scholar] [PubMed] [PMC]
23. Gupta M, Wahl B, Adhikari B, et al. The need for COVID-19 research in low- and middle-income countries. *Glob Heal Res policy.* 2020;5:33. <https://doi.org/10.1186/s41256-020-00159-y> [Google Scholar] [PubMed] [PMC]