Historic overview of pandemic, COVID-19 and Nepal's experience

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Abstract

Novel Corona Virus (COVID-19) is an infectious disease similar form of pneumonia/ SARS-CoV-2- impacting globally. Purpose of this article is to review the published studies and gather of the current information aimed at COVID-19 situation of Nepal. We summarized the published papers from the web pages, Journals, Google search engine. We focused eight steps to prepare this article (Conceptualization of the research question, literature search, title/abstract and full text screening, data extraction, risk of bias assessment, evidence synthesis, dissemination, updatefollowing the model of Tricco et al., (2020) conducting rapid reviews. It is declared as a public health emergency. However, why COVID-19 did not catastrophically hit Nepal rather than USA, Brazil, India, Europe and North America, is unknown. The pandemic of COVID-19 is still increasing and has created panic along with its different waves. But, as the numbers of cases are increasing rapidly governments are struggling to increase health care facilities and health care workers. There are lots of hypotheses about an end of covid but no clear answer has come yet. Thus, a lot of scientific studies is required to find the truth. Nepalese health services are needed to strengthen than today and follow lockdown, isolation, social distance and an advance screening test kit around the country. Further we need to adapt digitalization of health care system to prevent contamination.

Keywords: COVID-19, Nepal, Health Care.

Introduction

The given new name COVID-19 is an infectious disease similar form of pneumonia/SARS-CoV-2- emerging rapidly evolving situation globally, says –WHO (Zhu, et al., 2020). On Feb 11, 2020, WHO renamed the disease as coronavirus disease 2019 (COVID-19). Now the fear of coronavirus looks pandemic, but its severity is uncertain. The first case of COVID-19 was announced by WHO on 31 December, 2019 inWuhan city, Hubei province of China with unknown etiology.This was declared as a public health emergency by the WHO for every nation (World Health Organization, 2, 2020).while the outbreak of 2019 coronavirus was in January, 2020 and the new cases were 12,307 and 259 deaths reported till February1, 2020 including Nepal and other Asian countries (World Health Organization, 2020). By

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January 25, 2020, the epidemic had a doubling time of ≈6 days (Wu, et al., 2020). The first case (January, 23, 2020) in Nepal was suspected in a 32 years old who had returned from China Wuhan city and since then the government of Nepal started to screen the individuals who came from the aboard especially form the China Wuhan (Bastola,.et al., 2019). Nepal was one of the first nine countries outside of China to report a COVID-19 case.

COVID-19 is pandemic. Latest data has been indicating that the number of cases are rapidly increasing in developing countries. South Asian countries' policy to fight with such pandemic has shown less preparations (Chalise & Pathak, 2020). However, why the country Nepal is not catastrophically hit by COVID-19 till now, no one knows its satisfactory answer (Pathak, Gaire, Ho & Chang, 2020). The pandemic of COVID-19 is still evolving, and it is the second wave impacting the developing countries. Therefore, to predict its impact can be early (Pathak, 2020). The number of deaths has been lower than was predicated in spite of less preparations and limited health services. Thus, to limit the spread of the coronavirus, almost all governments worldwide regard lockdown as one of the guidelines (Pathak, Gaire & Acharya, 2020).

This review is not only for gathering and identifying the published papers in this fields. We provide the evidence based studies results which are most appropriate historical evidences and the experiences during COVID-19 because still we do not have solution of COVID-19 and people are highly affected globally. Thus this study could be one more important manuscript to relate aggregated conclusion and way forward for future. Therefore, we have searched the literature, but have adopted searching approach that can include the widest range of evidence rather than excluding 'weaker' studies.

Methods

We summarized the published articles from Journals, Google search engine. We focused eight stepes to prepare this article (Conceptualization of the research question, literature search, title/abstract and full text screening, data extraction, risk of bias assessment, evidence synthesis, dissemination, update following steps of Tricco et al., (2020) conducting rapid reviews working by experts till Novemebr 2021 regarding on COVID-19 and it impact on health. A comprehensive search of articles from electronic databases including Google scholar, Hinari, PubMed, between 2020-2021-November, related to covid-19 studies. We found 799 articles related with it and finally excluded the papers which didn't focus on history but focused on Nepalese situation of COVID-19. Additional papers were screened through citation and reference lists of published papers to provide the in-depth understanding to the readers.

Results and discussion

Historic overview of pandemics

Historically it has indicated before one hundred years ago(1918 AD), after the end of World War I nearly 50 million people were worldwide due to Spanish Flu and accordingly 500 million were infected, a world recovering from a global war that had killed 20 million people suddenly had to face even more deadly Flu outbreak (Martini, Gazzaniga, Bragazzi, & Barberis, 2019). Similarly, if we summarise the key characteristics of influenza pandemics from the past one hundred years the world we can see the pandemics are recurring in different time series. In the Asian flu H2N2 (1957-1958) the approximate number of death was 1-2 million and outbreak was from China. Hong Kong flu (1968-1970), H3N2, origin was in China and death was projected 50,000- 2 million and the Swine flu (H1N1) 2009-2010 was spread in Mexico and the death number was upto 575,000 (Saunders-Hastings & Krewski, 2016). However, Nepal had not registered the death case by Swine Flu then. Another Russian flu (caused by the same H1N1 virus) (1977-78) killed about 700,000 people (Michaelis, Doerr, W., & Cinatl, 2009) and by the typical flu 400,000 died globally (Paget et al., 2019). Since 2009 -2010 such pandemic have been continuing globally throughout global population with associated seasonal outbreaks(World Health Organization, 2021). While in 2009, A.D. Influenza A "H1N1" pandemic: Global infected 700 million -1.4 billion, Global deaths 150,000-600,000, Nepal: Infected 173, Deaths 3. In 2003 AD. SARS outbreak: Global infected ~8,000, Global deaths-770, Nepal: Infected 0, Deaths 0 (Zimmer& Burke, 2009).

In 1918 AD, the Spanish flu was spread with the main route through the infected travelers. Because of the end of World War I the majority population mobility was high on the different sectors like; in traders', laborers, soldiers' sectors and migrants they were travelling from one country to another country. The spread accelerated when the infected soldier came to their family via overcrowded transportation after the end of the "WW1" (Zimmer, Burke, 2009). Furthermore, in 1918 AD, only after the first wave of pandemic, non-pharmaceutical intervention was implemented to stop virus transmission like today —closure of public gathering, closure of airport, clubs, schools, and promoted to have self-quarantine, self-isolation, and individual/personal health hygiene (cough and sneeze etiquette and use of facemasks etc.) practices and spraying on the residence, community for the disinfection practices. Interventional programs were implemented early and for longer duration had a greater impact in reducing infection and death rates. However, at that time the implemented program was not sufficiently successful because the NPIs alone could not solve susceptibility infection of virus. The NPIs discontinued inappropriately, and infection quickly returned to its previous phase. The "H1N1" influenza strain emerged by the cause of "Spanish flu pandemic", a disaster that has been called one of the medical catastrophe in history"(Zimmer, & Burke, 2009).

All of these deadly and pandemic outbreaks in the past such as "flu", "SARS" and "MERS", "Hong Kong flue","Asian flu" as exhibited have almost similar history of disease transmission including COVID-19 today. Seafoods, harbor towns, ports, stations, ships and trains transported the infection easily. Further, poor sanitation, overcrowding, and lack of health services were set off factors. Besides these there were differences between 1918 and 2020 for instance: In 1918 almost the year (1914-1948) was approaching to the end of first-world war(Huf, & Mclean, 2020). Second, science and technology was in the growing phase at that duration and most scientist (physicists) were in the experimentation of immunization and antibiotics to treat secondary bacterial pneumonia. Physicists were preoccupied with the structure of atomic particles. Antibiotics were not discovered because biotechnology was not considered as discipline. Unlike to today's era there were no digital medias, social medias and other web internet were not emerging and they were not accessible to public to get current information of the pandemic issues. That was an another part of impact on mass level (both positive and negative impact) that could deal rapidly as today (Danon, et al., 2011). War was helping to the population to demoralize to the populations and made weaker human security. Most western countries (European and American) were dominated by the colonial powers. Now the situation is not as before, China and other countries are increasing their capacity gradually. Neither there were big institution UN, UNO, WHO, WTO nor governing body in the world in 1918 (Nicholls, 2006). In spite of, all the progress in science and technology today, what is fundamentally lacking and what the pandemic of the novel coronavirus-19 disarrayed is the lack of solidarity among nations and dearth of leadership on the world arena.

Principle of Prevention and control of any kinds of infectious disease is to "BREAK chain of Infection/ Transmission". Chain comprises of Agent (SARS-CoV-2) Host- (Human) -Environment and time. It's an epidemiological triangle. No one knows whether we are infected with this virus until we have some signs and symptoms and the test. More than 80% of the infected may experience symptoms like seasonal flu, cough and mild fever for which majority of us don't go for medical checkup. And 18% infected never develop symptoms and majority are in incubation period. But they can spread infection unknowingly-for those who are vulnerable like children elderly population, sick with chronic diseases, person having lack of immune compromised cases (Viswanathan, et al., 2020).

How it can be transmitted ?

Human-to-human transmission is the most serious transmission route of COVID-19, especially among healthcare workers (Richterman, Meyerowitz, & Cevik, 2020). The current consideration is the COVID-19 spread via droplets, direct contact and by coming into contact with contaminated surfaces and objects. When we sneeze, cough or talk, we expel particles in a range of sizes. It remains viable in aerosols for three hours and 72 hours in plastic (Tang

et al., 2020). A new study in China has been found "the virus in the faces of as many as 53% of hospitalized patient (still under study) (Emami, Javanmardi, Pirbonyeh, & Akbari, 2020). Therefore, in the case of Nepal we need to be careful with its spreading capacity of this disease because whether we may spread the infection unknowingly to our family and the community. Furthermore, the incubation period (entry of the virus into the human body to appearance of first symptoms) of COVID-19 ranged from 2 to 14 days and mostly five days after becoming infected. Some reports suggest that the incubation period may be as long as 19 to 27 days (Dietz, Horve, Coil, Fretz, Eisen, & Wymelenberg, 2020). However, countries were adapting the universal rules of staying home, social distancing, lockdown, using mask, sanitation of hand and band the transportation system worldwide. South Korea has used testing for the virus aggressively in large scales so that the infected could be separated from non infected. Thousands of Nepalese have returned home to Nepal from India who could neither be quarantined not tested with the highly approved technology. They are spreading all across the nations (village and towns). Likewise, thousands of people living in Kathmandu are moving to the villages where they may be meeting those coming from India and other countries (SAARC countries, UAE, Europen, China, etc.) such situation is quite complicated to apply the safety measures (Rayamajhee,et al., 2021).

The infectivity during the incubation period for COVID-19 is a big challenge for controlling the disease. Evidence showed that a potential transmission of the COVID-19 during the incubation period, that means asymptomatic sysmptoms may transform the virus. So, Nepalese all were in most vulnerable stage of contamination because Nepal does not have well sufficient technologies (digital thermometer) and tools to identify the virus, neither sufficient bed in hospitals nor appropriates facilities with health professionals, it can create epidemic if COVID-19 spreads Nepal. To fight with the COVID-19 Nepal could not have adequate digital thermometer except in Tribhuban Internationals Airport. Similarly, Nepal does not have adequate protective equipment PPE or health care professionals (doctors, medical/ para medicals staff and others who involve in treating this virus). Nepalese hospitals were not prepared to treat for the patients with having special ambulances(double cab ambulances) to carry patients to health institutions. Similarly, National Public Health Laboratory, the Ministry of Health and Population lacks reagents to screen the test of the COVID-19 (Sapkota, Dangal, Koirala, Sapkota, Poudel, & Dhital, 2020).

Although the Ministry of Health and Population of Nepal is working hard to ensure that all passengers who land in Nepal through international flights are carefully screened. Ministry has deployed 13 health workers for screening international passengers at the airport. But this number isn't well enough to screen all the passengers who are entering Nepal by flights (Neupane, Shrestha, Adhikari, & Gauli, 2020). Nepal government has adapted WHO's country and technical guidance- coronavirus disease (COVID-19) as

followings: A) Critical preparedness, readiness and response actions for COVID-19, National laboratories B) Risk communication and community engagement C) Early investigation protocols D) Naming the coronavirus disease COVID-19 E) Country level coordination planning and monitoring, Clinical care F) Operational support and logistics G) Virus origin reducing animal human transmission) Humanitarian operations campus and other fragile settings I) Surveillance rapid response teams and case investigation J) Infection protection and control/WASH K) Guidance for schools, workplace and institutions L) Points of entry/mass gatherings M)Health workers.

What can be done ?

Currently, there is no any advance ways to cope this infection without collective/ joint effort to prevent or control COVID-19. Every citizen of community, government, and stakeholders need to understand and follow the rules and regulation rather than ignoring and not applying protective methods. Quarantine and isolation are the foremost ways to keep ourselves safe as it breaks the chain of infection applying contact tracing-contact identification, contact listing, contact follow-up (Aquino, et al., 2020).

People often interchange the term quarantine and isolation. Isolation and quarantine mean it is public health practices to protect and prevent public from exposure of contagious disease.Typically, isolation separates sick people with a contagious disease from people who are not sick. Quarantine separates and restricts the movement of people who were exposed to a transmissible disease. It also helps to keep a check on them. These groups may have been exposed to a disease and do not know it, or they may have the disease but do not show positive signs and symptoms. Thus, quarantine is usually applied for apparently healthy people but are regarded as high risk group (came from infected community/ country/ probably exposed etc). They may be in incubation period or asymptomatic state but capable of spreading infection in the community unknowingly. Thus, keeping in quarantine must be first line prevention by breaking contamination. Whereas isolation is keeping the infected people separately that they will not spread infection to others (Centers for Disease Control and Prevention, 2021). Further, people coming from other country should be kept in quarantine before they go to their family. Sheltering in schools nearby the border with basic facilities. We may keep them in group quarantine under medical supervision and simultaneously orientation and psychosocial counselling to be provided. Sending them in self-quarantine is a blunder and our government is doing the same. Self-quarantine is only for those who are already in the community or in their family.

Now experts are suggesting to adapt social distancing of at least three feets from each other (or if possible six feet is suggested), use mask properly, social isolation, hand wash, hygiene and cleaning the place where you live. Just using hand sanitizer doesn't protect enough so cleaning surroundings and health promotion activities to boost immunity and stable mental health, drinking warm water more frequently and lemon water etc. (Peckham, 2020).

Stay in communication and get information: In case of any doubt inform appropriate center. Being responsible by own self to the family, community and not coming into contact of this, not taking risk behaviors because this deadly virus may easily and sustainably spread its effects in the community.

What was the learning ?

COVID-19 is still evolving, therefore it may be too early to predict the outcome of the current outbreak. However, it is forecasted that COVID-19 could evolve to a low pathogen but highly transmissible coronavirus, which might return every winter, like the virus that causes seasonal influenza (Telenti, et al., 2020). At the beginning phase, local outbreaks were ignored, and action was not taken until it was too late to achieve containment. It seemed the major pitfall of human being. During this time neither we referred for immunization nor medicines because this disease still was unknown. If we recognize the nature of disease transmission "the first and the foremost steps to control the infection is stop/delay the infection transmission", as early as possible(Schoch-Spana, et al.,2021).We need a more robust safety net, give workers paid sick leave, health insurance safety net, focus on universal health-care systems, help bolster the economy by supporting consumer spending on the midst of a serious outbreak, should increase funding for local health departments with ability to prepare for the next pandemic (Unicef, 2020).

No one cannot say the history is always great and it gives many historical lessons for coming days. It is holding the attention that, the approach adopted in 1918 AD., Spanish flu outbreak was almost similar to covid-19 today. A century before, the scenario was quite different but today we are with better equipment with established system, knowledge, experience, resources and more importantly diagnostic test kit. But, again we have neither vaccine nor medicine to fight virus SARS-CoV-2. Thus, there is no way to be safe from the virus then to discourage social gatherings, staying inside home, using protective mask, maintaining appropriate distance, frequent handwashing and applying hand sanitizer, after touching infected surfaces and coming from the crowd. Use of diluted household bleach is recommended, alternative ways in the use of cash exchanging is recommended while buying and selling goods, use of alcohol solution and tissue papers are necessary to clean (Chand, 2020).

Nepalese people are nervous and anxiety has spread more than the virus itself, downfall of economics is being more critical for the meduim class of business/enterprenuer are affected, daily wages workers (Baral, 2020) and poorer people have started ignoring the rules and going out sides due to hungy dying situations. Domestic violence of women and teenagers are arising (Gorbalenyaet, et al., 2020). The only one positive improvements have been seen is on the aspects of environemtental quality (Hamblin, 2020). The river and the air quality has dramatically changed which is shown by the air quality index. In normal days there used be between 150-180 PM but now it is 5-85 PM of the central city

areas (Pinkstone,2020). Nepal is connected with big countries India and China and the boarders are open. While the second wave was catastrophic in India and the immigrant people returned Nepal. People returning to the country played a role in increasing COVID -19 in Nepal. During the month of April- May (wave second, 2021) the country Nepal faced large number of COVID death cases and was very terrible to control and manage in the hospitals for the health professionals therefore it is essential to expand alternative ways of adapting digital technologies in health practices (Pathak et al., 2021).

In the context to Nepal, the government (MOHP) has partnered with the local health sector, multi-sectorial, and international humanitarian assistance and formulated a high-level coordination mechanism to combat COVID-19 disease. In addition, PPE, logistic support, adequate protective measures, molecular diagnostic testing, monitoring and health desks were managed by Government of Nepal. Despites, a number of critics/ debates arouse sufficiently against the benefits of protective measurements during COVID-19 pandemic and is disproportionately affecting older adults, their families, caregivers, health care providers and communities worldwide.

Public health response and floating views

The increasing number of new infection and death toll of this virus has been a major threat and challenge for each and every individual globally. No one knows the natural history of the disease and the true nature of virus perfectly. Some recent studies, claimed the presence of COVID-19 in air samples (preliminary data from China, Singapore) to avoid the misleadingness and confusion, and to help scientists and public with better communication, renaming SARS-CoV-2 as human coronavirus 2019 (HCoV-19). Such a name distinguishes the virus from SARS-CoV and keeps it consistent with the WHO name of the disease it causes, COVID-19 (Shet, Ray, Malavige, Santosham, & Bar-Zeev, 20202).

Not only from the experience of Italy, Spain and USA, present outbreak gave lesson – as how world may suffer because of delayed intervention and underestimation of disease, its infection and preventive measures. When such level of contagious virus travel via respiratory droplets then it has always been disaster if we don't block / break the travel route of infectious agent urgently. The more humans at any given place and the more they get into contact with each other, the more infections there will be - propagate infection along with preventive measures including quarantine and isolation, screening test and contact tracing is must and as soon as possible. Apart from that in such propagated outbreak, it will be too late and we can just wait helplessly until the larger peaks sweep the people (Dhakal, 2020).

At last, the group of researchers have been puzzled why COVID-19 does not record developing counties rather than China, Europe and North America? Mostly the low-income countries in South Asia have not recorded more cases except India. The hypothesis started to discuss whether BCG vaccine played an effective role against COVID-19. It is also

published that those countries has still adapted vaccination program of Bacillus Calmette-Guérin (BCG) for T.B. have significantly lower death rate found by the coronavirus-almost six times lower than nations that do not use it, an online based study (MailOnline) revealed (MyRepublica, 2020).Some similar findings are published online on archive site medRxive but not in a scientific journal as the research has yet to be peer-reviewed (Rosenbau, 2020). It is intriguing thematic issue to see the fact association between BCG use and lower COVID-19 attributable mortality. Even though, we are unable to show about the actions and changes in Nepal after seeing those policies and restrictions in other countries.

In the beginning of the pandemic the Ministry of Health and Population, Nepal said that there was around 2,000 hospitals, of which about 150 are public, and about 4,000 health centres across the country**.** Hospitals across Nepal, both public and private, have 700 ICUs. ICU beds are needed in single rooms to treat coronavirus patients, which government does not have. There were, in starting point of the phase of COVID-19 it was recorded only 155 beds in various hospitals in Kathmandu valley for isolation. A lot of exercise from the government team has tried to address in the provinces and has studied the situation**.** However, during this second wave of COVID -19 time the Nepal government has been able to establish well standard beds, capacities and plenty of isolation centers. Every local bodies has been actively working on it. However, still we, our health system is not able to manage in the time of second pandemic time. This means all other patients must be removed from ICUs even to treat a single coronavirus patient (Aleem,2020). Governement is to set up 235 ICU beds amid coronavirus fears. Further, the government meeting has decided to set up 1,000 isolation beds, arrange medicines and mobilize specialized health workers to check the spread of the disease (Denghui & Jia, 2020). In comparision, Italy had made avaiblable 3.2 hospital beeds/1000, and 5200 intensive care beds (Pokharel, 2020). The USA has 2.8 bed/1000 people, China has 4.3,south Korea 12.3, Germany 8. France 6 (Jones, 2018), while Nepal had made available only around 0.9 hospitals beds per 1,000 people (Mishra, Bhusha, Kumar, 2020), even if, these countries are struggling with COVID-19 in the phase of COVID-19 time. In contrast, with the others countries of hospitals and facilities Nepal's health services capacity can only manage only a few hundreds of COVID-19 patients properly. Additionaly, all the hospitals' ICU beds are already occupied. Each patient needs an approximately 15 days to recover (not less than 10 days). Neither this algorithm could change nor was able to set Nepal's health system immediately. Thus, this COVID-19 has forced to think for medical community on the separate clinicians providing care system, and algorithm change because COVID-19 is not worse than Covid-19–related pneumonia or influenza. But a Chinese study has shown that the incubation period could be 24 days which was concluded after the examination more that 1000 COVID -19 patients (Kayser & Rottmann 2020).

Researchers are starting for clinical proof in Australia, Netherlands and Germany that should answer the questions surrounding BCG in the near future. However, it

is true that BCG is not itself an anti-virus vaccine, but helps to build the body's immunity not just against tuberculosis, but also from viral infections. The trials are being conducted on people at high risk of exposure, primarily health care personnel. Public health experts commented that developing countries do not have enough screening equipment/kits for the virus. Some developing countries even though they do not have enough screening kits for COVID-19, there still remain low confirmed cases (Chanda, 2020). Further, there are floating many theories behind this however, more plausible is that people in countries that administer the anti-tuberculosis vaccine (BCG) seem to be less susceptible to COVID-19. Even before this pandemic, there had been epidemiological studies that indicated higher immune levels in people with BCG against communicable diseases, including viral infections. Similarly, the hygiene theory also shows another way to develop the resistance to the new virus because the environment is not sterile as in industrialised countries. Other scientists have theorized that countries with a high rate of malaria seem to be relatively less affected, and have even proposed chloroquine as a cure (Chanda, 2020).

Another hypothesis is broadly being discussed on the basis of spreading disease, these are — ecological modeling and mathematical modeling. Ecological modeling argues that transmission of viruses can be affected by the following factors; like altitude, temperature and humidity of environment, population density, age and gender of people. The arrival of summer and rainy seasons in the northern hemisphere may therefore effectively reduce the outbreak of COVID-19. In contrast, both cold and dry weather conditions weaken the human immune system, making them susceptible to viral attacks. This model further elaborates if people stay in for most of the time weather conditions will hardly influence virus transmission due to no chance of contact between people (Chalise, & Pathak, 2020); (Pathak,2020).

Likewise, according to mathematical model, disease can extend itself in cities and regions in a narrow east-west side of the world (about 30-50^{o} N') latitude having temperature between 5-11^{o}C and low humidity levels (specific: 3-6 g/kg and absolute: 4-7 g/m^{3}). Soon after China, the new epicentres of disease were South Korea, Japan, Iran, and Northern Italy (all roughly along 30-50^{o} N' latitude). Thereafter the disease covered the Northwestern United States, Spain, and France, all along 30-50^{o} N' latitude. However, the virus failed to spread to countries immediately north part of geographical region such as Russia and Mongolia and south of China region. The number of those suffered and death patients reported in Southeast Asia is still much less registered than those in temperate regions except India. All above mentioned facts show a strong claim that on the basis of weather modelling, it is possible to predict countries most likely to be at a higher risk of COVID-19 outbreak in upcoming weeks, allowing for the concentration of public health efforts on surveillance and containment (Pathak, 2020).

Conclusion

Globally a hypothesis is floating "why are there lower cases of COVID-19?" Thus, it is unanswered: What are the best answers weather may be ecological modeling or mathematical modeling or the association between BCG vaccine that helped fight the COVID-virus or the immunity power is higher with Nepalese by birth or lack of advance screening equipment or something else? Of course, cure and its causative agent are still unknown, require a lot of scientific studies to find the truth. The public health experts warn, Nepalese health services need to strengthen today and should follow lockdown, isolation, social distance and an advance test around the country for tackling COVID-19. The Government of Nepal needs to establish rapidl expand diagnostic services and guidelines for diagnostic services for those who need to be hospitalized, increase measures of social distancing, provide transparent and streamline all communications, reports and data to everyone (Pathak, 2020). The pandemic of COVID-19 is still fluctuating. It may become a seasonal pathogen, like influenza, which might return every winter with seasonal outbreaks. Eventhough, COVID-19 is a serious health challenge for Nepal but so far, the number of deaths has been lower than excepted with comparison to neighbouring country India. If Nepalese health care system could apply useful holistic control, care, management and prevention approaches it will help to decrease the burden of patients infection and in health professionals in health institutions (Pathak et al., 2021a).

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