

First 65 Days Trajectory of COVID-19 Outbreak in Pakistan (Facts, Hopes and Expectations) an Evidence Review

Khurshied AK^{*1}, Junwei L², Murtaza H³, Ikram ul HM¹, Jamal MK⁴, Zahoor M⁵, Osama G⁶, Muhammad HS⁷, Hameed MS¹, Khaliq MA¹, Shahbaz A¹, Ahmed KK¹, Tahria BQ¹, Maqbool A¹, Nisar H¹, Matlob A¹, Ijaz Hussain M¹ and Asma N¹

¹Ghazi University City Campus, Dera Ghazi Khan 32200, Pakistan

²Department of Infectious Diseases, The Second Hospital of Nanjing, The Affiliated Hospital of Nanjing University of Chinese Medicine, Nanjing, 210003, China. Public Health and Therapy Center of Nanjing, Nanjing, 211113, China

³Department of Biochemistry and Biotechnology The Islamia University Bahawalpur 63100, Pakistan.

⁴Cholistan University of Veterinary and Animal Sciences, Pakistan

⁵China Agriculture University Beijing

⁶Nowshera Medical College, (KMU) Nowshera, Pakistan

⁷Iqra University Islamabad Pakistan

*Corresponding author: Khurshied Ahmed Khan, Ghazi University City Campus, Dera Ghazi Khan 32200, Pakistan.

E-mail: kakhan@gudgk.edu.pk

Received: May 18, 2020

Published: June 15, 2020

Abstract

There is a significant risk to the public health in world and strong apprehensions in Pakistan due to emerging infectious disease known as Covid-19 which is characterized by a completely unique mode of pathogen. In this paper we reviewed the first 65 days trajectory of Covid-19 outbreak in Pakistan and its impact on over the coming days, weeks and months. Since the first reported case of infection (COVID-19) caused by the SARS-CoV-2 on February 26th, 2020, in Karachi, (Sindh), until there has been a total of 15760 confirmed cases with 313 victims as of April 30, 2020. The identified route of (COVID-19) in Pakistan was through patients with travel history from various countries, such as Iran, China, Afghanistan and India coming to Pakistan. Further the data revealed that out of the total COVID-19 cases in Pakistan 78 percent cases were reported from visitors coming from Iran, the remaining statistic filled by religious centre Rewind and some by local transmission. Pakistan responded toward the pandemic naturally through management and arrangement of quarantine facilities, field hospitals, and necessary testing and protective kits. It was established early that the state of affairs of quarantines were not adequate, but was supportive to a big extent. The lockdown damaged daily wage labor financially and we have compiled a template for monitoring this impact till this crisis is over. Further COVID-19 higher education response of online system halted due to connectivity and quality issue. We suggested that to reduce the emerging risks of Covid-19 in future, the government should launch contemporary isolation house immediately at the departure and arrival points on border air ports as well as on communication routes and in major hospitals. We proposed hybrid education management for online system and suggested to generate catalogues and database for daily wage labour for on time support in future.

Key words: COVID-19, pandemic; Emergency Quarantine; Partial lockdown

Introduction

Multiple emerging and reproductive infections microorganisms can pose a serious threat to public health and food security. Pakistan needs to identify these threats, maintaining local, regional and global health Security issues. Regardless of the region, country and race infections are a serious threat. Emerging infectious diseases (EID) has been defined as "infections that have appeared in a new way [1]. Emerging infectious diseases are a burden on public health and the national economy and can affect environmental, ecological and socioeconomic factors of the nations. Globalization of food markets, changes in

agriculture and livestock practices, climate and environmental degradation allowed new and easy passage for re-immersion of infectious agents and first appear in unusual areas [2].

The infectious and emerging infectious disease can be a terrifying situation for the third World Countries like Pakistan. Pakistan have been hit a number of pandemic diseases, due to regional geographical and environmental conditions [3]. According to WHO, the country is in danger of spreading many outbreaks due to inadequate basic health care of the future planning, Improper cleaning, crowded city, inadequate number of medical practitioners and inadequate medicines, contami-

nated water, lack of awareness among people Public, Health-care attention to health conditions [4]. The government is dealing with a large number of refugees and internally homeless people, religious misunderstandings, and resources limitations. Due to limited resources and financial constraints according to recent data, Pakistan spends 4.7% of its total budget on health care, which is not enough for the fifth populate country in the world. Due to defects in health care practices and environmental conditions, pandemic diseases always look for local outbreaks [5].

This review aims to critically summarize the first 65 days from 26th February to 30 April (2020) in understanding the coronavirus trajectory of Pakistan, as well as the strategies in prevention and treatment.

Method and Approach

This was a desktop study. Most of the information’s were collected from (<http://covid.gov.pk/>) which is web portal of COVID -19 and further information from print, electronic and social media from the time line of 26th February to 30 April 2020 about the current situation and challenges of Pakistan against COVID-19 war.

Results and Discussion
2020 COVID-19 Outbreak in Pakistan

The 2019–20 coronavirus pandemic trajectory to Pakistan started on 26 February 2020, when a scholar in Karachi found positive upon returning from Iran [6]. By mid-March, cases reported frequently upon arrival of testing kits in all four provinces, the two autonomous territories, and the federal territory of Islamabad [7]. As of 30 April 2020, there have been over 15,758 confirmed cases with 4052 recoveries and 346 deaths in the country. Punjab has recorded the most cases at over 5,800, while Khyber Pakhtunkhwa has reported the most deaths in the country, a total of 122 [8]. The country has been put under a nation-wide lockdown until 9 May [4] which was initiated on 1 April and later extended twice [9].

According to a media report, Pakistan could have projected 50,000 cases of the COVID-19 by 25 April [10-12]. However, the numeral statistics by then stopped under 15,000, less than half of what was estimated [13]. According to available data sources predicted that a Tablighi Jamaat religious gathering was main super-spreader foundation for outbreak which took place in Lahore in early March 2020 [14], accounting for 27% of cases in the country by late April [15]. Meanwhile Pakistan started vaccine trials in teamwork with Sinopharm a Chinese pharmaceutical company in April 2020 [16] (Figure 1, Table 1 and 2).

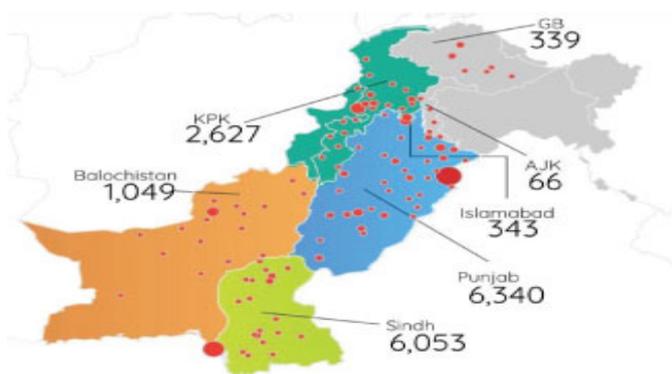


Figure 1: The province-wise breakup of the total number of cases as of 12am, April 30, is as follows in image and data source (<http://covid.gov.pk/>).

Table 1: COVID-19 cases during 26th February and 30th April, 2020. Data source (<http://covid.gov.pk/>).

S.No	Particular	Status
1	Total confirmed cases	15758
2	Total deaths	346
3	Total recovered	4052
4	Active Cases	11361
5	Serious Critical	111
6	Total cases 1million Population	71
7	Death 1million Population	2

Table 2: The province-wise breakup of the total number of cases as of 12am, April 30, is as follows Data source (<http://covid.gov.pk/>) and <https://www.worldometers.info/coronavirus/coronavirus-death-toll/>.

S.No	Province	Confirmed Cases	Active Cases	Deaths	Recoveries
1	Punjab	6061	4178	103	1780
2	Sindh	6053	4719	112	1222
3	Khyber Pakhtunkhwa	2313	1577	122	614
4	Balochistan	978	784	14	180
5	Islamabad Capital Territory	313	266	04	44
6	Gilgit-Baltistan	333	265	03	228
7	AJK	66	29	0	37
8	Total	16177	11818	358	4105

An insignificant deviation of record was observed in two different sources (Table 1 & 2) and figure 1. This can be justify and endorsed as to time taken in bring up-to-date of record. One thing is clear that while observing the data in judgment of the adjacent countries (China and Iran), condition of Pakistan is not as horrible as projected by media. Question arises, how Pakistan managed and sustained such bottom level of COVID-19 cases after 65 days of health emergency. First case in China informed its first confirmed case reported on 10th January, 2020 tailed by Iran on 18th February, 2020. During this time period action plans were taken by Pakistan to concentrate on Pak- Iran border and international flights termination. Being as a developing country, the trajectory of COVID-19 outbreak could be highlighted in graphical illustration given below (Figure 2, 3, 4 and 5).

COVID -19 Demographic % of Pakistan

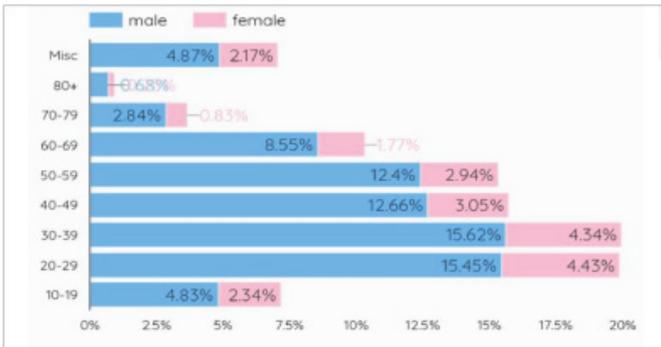


Figure 2: COVID -19 Demographic % of Pakistan showing different age groups affected by infection. Interesting to note male population 15.62 % age group between 20-30-39 shown higher rate of infection as compared to other age groups. The fact that Pakistan has a higher young population as compared to China, USA and many other affected countries, explains why a majority of the confirmed cases in Pakistan constitute young adults. The thing that we must be worried about is that many youngsters think that coronavirus only affect elderly people because they have weak immune systems and not taking precautionary measures. Data source; <http://covid.gov.pk/stats/pakistan>

COVID-19 Demographic Diseased % in Pakistan

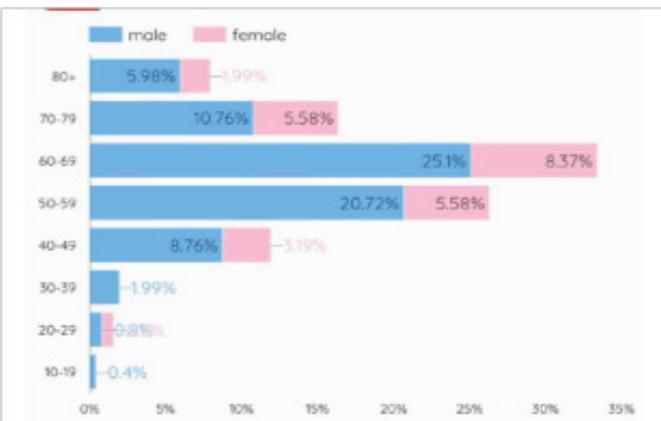


Figure 3: Covid-19 Demographic Diseased % in Pakistan indicating the novel coronavirus tends to affect men more severely than it does women. The male age groups have higher rates of infection as compared to females. Perhaps it's because the X chromosome (which women have two of, but men have only one) has a larger number of immune-related genes, giving women a more robust immune system to fight off the coronavirus, SARS-CoV-2. Sex differences aren't the only factor at play, however. Other groups more vulnerable to COVID-19 include the elderly and people with diabetes, high blood pressure and obesity. Data source; <http://covid.gov.pk/stats/pakistan>

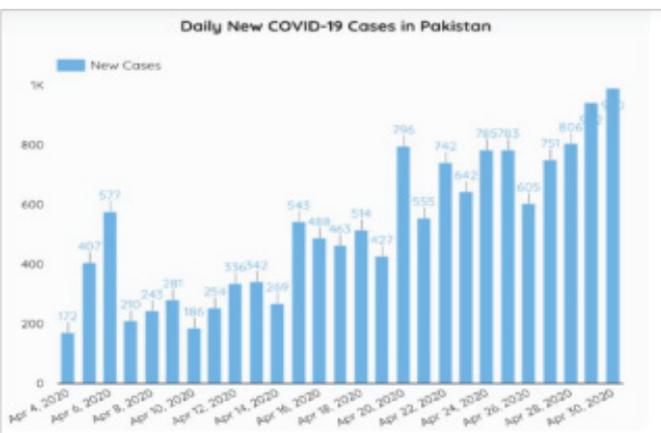


Figure 4: Daily new COVID-19 cases in Pakistan.

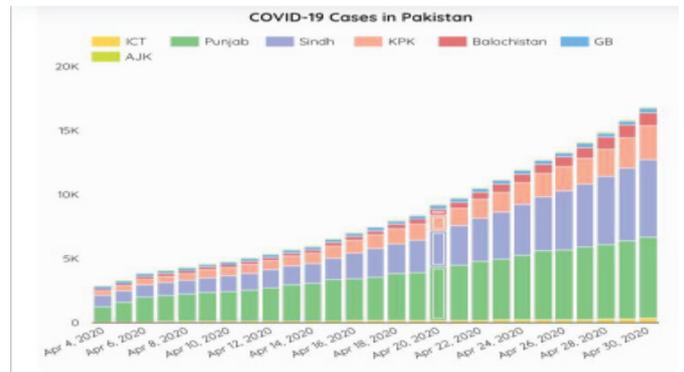


Figure 5: The province-wise breakup of the total number of cases as of 12am, April 30, is as follows

Can Taftan Prove to be Pakistan's Wuhan?

The number of corona patients in Pakistan is increasing rapidly and after Sindh, the presence of people infected with the virus has been confirmed in Khyber Pakhtunkhwa and Punjab. The total number of people infected with the corona virus in the country has reached close to 15759 and this number is expected to increase further [17]. Whether it is a new patient from Sindh or the first case from Punjab and Khyber Pakhtunkhwa, one thing all these victims have in common is that they all came to Pakistan from Iran and spent 14 days in a quarantine center at Taftan areas. Concerns about the facilities and management of the quarantine in Taftan are not new. Ever since the quarantine was set up, there have been accusations of poor conditions and poor hygiene. Now the situation is that on social media, Taftan is being compared to the Chinese city of Wuhan. Wuhan is the site of the coronavirus outbreak and is one of the most affected areas in China. Balochistan officials acknowledged that due to inadequate facilities in the quarantine on the Taftan border, where it had not been particularly helpful in curbing the epidemic, one of the visitors was kept together. There are also concerns about transmitting the virus to others [18].

Pakistan's Struggle with COVID-19 Quarantine

In medical science, quarantine means isolating someone for a period of time to prevent the spread of an infectious disease. Government of Pakistan has set quarantine house at borders as well as in various cities. At the same time, the government categorical announced to lockdown metropolitans and highly densely populated municipalities for one month duration. In this line, which we can call it as Chinese approach of self-quarantine, overall country was placed into [19]. But the management presented no competence to retain the citizen inside their houses. For elementary necessities and day-to-day provisions, such as foodstuff and medications, they were acceptable to go outdoors. This is how; selected yards were permitted to keep work and open. These consist of vegetables, general store, and medicine shops. Some commercial and factories were entirely closed, such as industrial zones, barber shops, hotels, weeding hall and barber shops. In initial Phase Zaireens from Iran at once created immense problem for Pakistan. In the first week of March more than 3000 Zaireen were acknowledged and were held in reserve restricted to Taftan. When the number of Zaireen surpassed approximately 6000, it became problematic to be providing lodgings in quarantine house at Taftan. Pakistan was not supposing such massive number and was not organized and equipped for this. At first it was decided to place them at Taftan for 14 days quarantine. But the Zaireen were

not collaborating with the administration, and were with cracks to discharge from the quarantine center. On 26 March it was decided to hand over the Zaireen to their particular provinces from where they belonged. In this way 4596 were dispensed above to provincial administration. They were engaged in several quarantine centers located in Provinces. For instance Airport campus of Ghazi University DG Khan, Multan were initial centers of southern Punjab. In most of the press and electronic media this dispensing over and scattering of Zaireen was underlined as a cause for refinement and spread out of COVID-19 in Pakistan. According to International media reporter Aljazeera TV, Taftan was the epicenter of epidemic in Pakistan. By reviewing a number of tapes slides uploaded by different people, the following problems were identified:

- Insanitary and germ infested conditions
- No accessibility to medical consultants and specialists
- No convenience of medication and treatment
- Inadequate capacity of quarantine
- Storage in food of water and food supply lines

These hitches couldn't validate for certain quarantine centre. For example at DG Khan a Ghazi University Campus located 25km away from urban ring declared as quarantine centre and further in Multan the quarantine centre was agreed in Industrialized Estate zone for Zaireen returning from Iran. 1247 Zaireen were retained contrary to the existing size of 3000. Zaireen at Sukkur were set aside in Labour Society for quarantine. Residence of these all zones were in deep psychological stress against decision of government for the said quarantine centre. As a whole, the quarantine arrangement was not satisfactory. Therefore Zaireen from Iran were responsible for the mounting epidemic of COVID-19. According to part of hot news on social and electronic media from health ministry 78.2 cases were trace back to the Zaireen travel history coming from Iran (The News International, 2020) [20].

Higher Education Challenge for Pakistan under COVID-19

The COVID-19 pandemic has cast uncertainty on education of at the primary, secondary and tertiary level. To sidestep the swift magnitude of coronavirus, all academic and technical school, colleges and universities were shut down on 13th March, 2020 all through the country. At first this action of government was questioned for the reasons that no substitute preparations were arranged to save time of the students. Such as online classes, reading materials, quiz program, assignment etc. Later on, with the passage of time, the infection was spread out rapidly across the globe as well as Pakistan. It was evidenced that this academic termination was defensible and was a respectable choice [21].

Pakistan has 46.8 million affected students due to the COVID-19 pandemic, out of which 1.9 million are registered at the tertiary level. This pose stands the gravest challenge because universities have enrolled students from overseas and the whole country (Developed and under developed zones). Policies and schemes may miscarry but key assessment is not to finding the middle ground on goals and principles. Our learning system must be retain and move by taking care of the health and safety of all (faculty, scholars and staff), and safeguarding stability of academic programs by being elastic in outcome and accommodating innovative solutions. There are number of challenges in this regard where leadership has a key role to play in this time of crisis [22].

- Internet Connectivity particularly in remote areas
- Faculty's Lack of enthusiasm for Online Teaching
- All Subjects being Treated Similarly (These broader categories are: i) Arts and humanities; ii) Social sciences; iii) Natural sciences; iv) Biological sciences; and v) Engineering sciences. Lab-based disciplines which may suffer more through online teaching only.

How to Make Things Work

In most parts of Pakistan, due to hot summer, education institutes observed summer vacation during Jun and August. This year all the students will attend classes in hot most months of the year. For some people this may be a simple matter, but technically it is not that sound. All the schools, colleges and universities are not equipped to handle temperature above 40°C and will be a real problem, especially for the small kids. Besides, there is usually outbreak of summer diseases like diarrhea, and dengue. Pakistan may need to arrange a separate session of vaccinating for seasonal disease along with a separate program to beat high temperature to move country clocks time two hours early to use maximum sunlight and secondly in a world where information and facts are a mouse-click away, the title role of the educationalist must change too.

Coronavirus-related disruption can give educators time to rethink the sector with Hybrid learning arrangements. Online teaching should be complimented by at least one month of compulsory condensed face-to-face teaching when the universities open. This hybrid approach will help to maintain a certain level of quality and students will be evaluated the way they have been trained so far.

Regular temperature check of faculty students and staff at entry points to avoid the transmission within community.

A Template to Monitor the Impact of COVID-19 on Pakistan's Economy

The corona infection has carried us adjacent to an international recession. Government of Pakistan should jerk too exceptionally to evaluate the economic situation [23]. We have accumulated an outline template for observing this influence over the coming days, weeks and months, till this crisis is over. The template categorizes the sectors/industry that could possibly be affected. In addition, we also make available the mechanisms that intricate in the procedure, and the scales that can be used to monitor and gauge the impact. We may supplement here that it is not a comprehensive list which indicates gradient slope and we will retain informing it as the condition progresses.

The Template

The assumed model spots the sectors/industry that could hypothetically be affected. In addition, the mechanisms concluded which they would be exaggerated are also in case. The third column gives the scales looked-for to gauge this influence.

Daily wage labour Daily wage labour is the most vulnerable segment of our population. At present, Pakistan has a labor force of 72.5 million. 9.5 million are above 50 years age and 63 million are above 15 years age working in different sectors. Out of this total, 7 millions are daily wage worker and 3.6 million are unemployed [24]. Being as a developing country, it was not possible for the government of Pakistan to reach every daily wage labour for appropriate support for their daily needs.

Sector/Industry	Mechanisms	Indicators
Agriculture	Fluctuations in crops configuration and production due to change in domestic and international demand	Data on production of different crops e.g Cotton wheat etc
Manufacturing	Drop in call for merchandises due to lockdown circumstances	Employment and investment and transitional quantifiable inputs
Health and economic cost	Testing massive figure of people for COVID-19	Total number of hospitals (DHQ, THQ etc.) with in each district
Aviation	Income lost due to withdrawal of flights from foreign airlines	Number of cancelled flights for each destination due to COVID-19
Energy Markets	Decrease in oil and diesel prices	Crude oil prices (per barrel)
Trade	Reduction in export orders from COVID-19 affected countries affected due to potential threat of virus exposure.	No of export & import orders destination and product wise

Initially there was partial lockdown in Pakistan. The aim of partial lockdown was to avoid unnecessary interaction and mobility. Partial lockdown was good for daily wage labour. They could go to their work place. In the second phase major cities were locked down. Again it cannot be called complete lockdown, as someone can go outside for the purchase of various items of daily importance. Major markets, hotels and restaurants have been closed completely. After city level lockdown, Pakistan (Federal Government) has announced a relief package of 3,000 rupees per month for 7 million daily wage workers. Several questions arise with this package. Such as, how to differentiate between labour and daily wage labour? There is any database available with the government to reach the right person? These Rs.3000/- will be enough to meet monthly expenditures? If the question is no, will be a big disappointment. According to economic experts monthly food expenses of an average house hold size of five members is ranged from Rs.14000 to 17000. As per latest estimate, about 12.3 to 18.53 million may lose their emoluments. At present the monthly loss is about 22 billion. If the lock down continued, the monthly loss may goes up to 260.9 billion per month with a total collapse with irreparable loss to labour force of Pakistan. The COVID-19 episode is continued and Pakistan still has a long distance to go. Pakistan has to take care of it population in general and its labour force in particular. Pakistan is required to take the religious institution in confidence, use the government machinery for better planning in the coming days [25].

Conclusions and Recommendations

Due to inadequate possessions of capital Pakistan was not in a position to grips such fast mounting pandemic resourcefully. No one was assuming Pakistan to switch this pandemic professionally but the several developments exposed that the overall results were promising. Therefore, the several actions of Pakistan were significant and contracted the regulator over the spread of COVID-19 to a big magnitude. COVID-19 is/ was new to the world; it affected rich and poor countries by the same token. Developing countries like Pakistan seems more vulnerable as compared to developed world due to the following reasons:

- Planning and supervision of excellence to quarantine capacity
- Work-related protection equipment’s for para-medics and other health workers
- Responsiveness and instruction of common persons
- Management of day-to-day wage labor and other deprived sections of a society
- Accessibility of defensive actions in terms of disinfectant and good personal hygiene
- Convenience of first aid utility on time
- Exceptional transportation capability for COVID-19 patients and dead bodies.
- Availability of treatment in hospitals. On the basis of the above factors, poor countries, like Pakistan are/ were more vulnerable and affected the negatively.
- The following are few recommendation required for Pakistan:
- Pakistan must construct quarantine facilities on all exist and entrance with Iran, China, Afghanistan, and India.
- Pakistan should establish quarantine facilities at provincial level in all provincial capital cities, Karachi, Quetta, Lahore and Peshawar.
- Pakistan should initiate online classes as future strategy to avoid break in academic session during epidemic.
- Pakistan must keep a database for all sort of labour. In this way the government of Pakistan can reach to poor labour on time for support.

References

1. Morse SS. Factors in the emergence of infectious diseases. *Emerg Infect Dis.* 1995;1(1):7-15.
2. Morens DM, Folkers GK, Fauci AS. The challenge of emerging and re-emerging infectious diseases. *Nature.* 2004;430(6996): 242-249.
3. Paranjape SM, Franz DR. Implementing the Global Health Security Agenda: lessons from global health and security programs. *Health Secur.* 2015;13(1):9-19.
4. Guernier V, Hochberg ME, Gue’gan JF. Ecology drives the worldwide distribution of human diseases. *PLoS Biol.* 2004; 2(6):e141.
5. Jahan F. Dengue fever (DF) in Pakistan. *Asia Pac Fam Med.* 2011;10(1):1.
6. Pakistan Detects First Coronavirus Cases, Links to Iran Outbreak | Voice of America - English". www.voanews.com. Archived from the original on 6 March 2020. Retrieved 4 March 2020.
7. Coronavirus updates, March 18: Latest news on the coronavirus outbreak from Pakistan and around the world". *Geo News.* 18 March 2020. Retrieved 23 April 2020.
8. Shehzad, Rizwan. "Countrywide lockdown stretched till

May 2020.

9. The Express Tribune. Retrieved 25 April 2020. Coronavirus pandemic: Pakistan to extend lockdown for 2 more weeks as death toll reaches 31 Archived 8 April 2020 at the Wayback Machine, The Statesman, 2 April 2020

10. Coronavirus updates, April 4: Latest news on the COVID-19 pandemic from Pakistan and around the world". www.geo.tv. Archived from the original on 6 April 2020. Retrieved 4 April 2020.

11. Number of cases expected to rise to 50,000 by April 25, govt tells Supreme Court". www.geo.tv. Archived from the original on 6 April 2020. Retrieved 4 April 2020.

12. LIVE: PM Imran urges Pakistanis to be steadfast in their faith amid COVID-19 crisis". The Express Tribune. 4 April 2020. Retrieved 4 April 2020.

13. Coronavirus updates, April 25: Latest news on the COVID-19 pandemic from Pakistan and around the world". Geo News. 26 April 2020. Retrieved 26 April 2020.

14. Chaudhry, Asif. "Tableeghi Jamaat in hot water in Pakistan too for Covid-19 spread". DAWN. Archived from the original on 8 April 2020. Retrieved 8 April 2020.

15. 27% of Pakistan's Covid-19 cases linked to Raiwind Ijtima: report". The Express Tribune. Retrieved 21 April 2020.

16. China has prepared a vaccine to treat COVID-19 patients and it would be launched in Pakistan in three months". Rackpost.com. Retrieved 23 April 2020.

17. <https://www.theguardian.com/world/2020/mar/19/pakistan-coronavirus-camp-no-facilities-no-humanity> Retrieved 27

April 2020.

18. <https://www.garda.com/crisis24/news-alerts/316736/pakistan-country-closes-taftan-border-with-iran-amid-covid-19-concerns-february-23> Retrieved 27 April 2020.

19. Wilder-Smith A, & Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *Journal of travel medicine.* 2020;27(2):20.

20. Zafar Mirza. The News International, 2020. 78pc of confirmed Corona cases have travel history of Iran. URL: <https://www.thenews.com.pk/print/634172-78pc-of-confirmed-corona-cases-have-travel-history-of-iran-dr-zafar-mirza>, Wed Apr 01, 2020.

21. <https://www.thenews.com.pk/print/645803-covid-19-education-response> Retrieved 28 April 2020.

22. Zahid Asghar. <https://www.pide.org.pk/pdf/PIDE-COVID-Bulletin-14.pdf> Retrieved 27 April 2020.

23. Muhammad Nasir and Naseem Faraz. <https://www.pide.org.pk/pdf/PIDE-COVID-Bulletin.pdf> Retrieved 28 April 2020.

24. Iftikhar Ahmad. COVID-19 and Labour Market. Centre for Labour research. 2020. URL: <https://clr.org.pk/covid-19-labour-market/>.

25. Mehtab Haider. Forecast of COVID-19: 'Pakistan may face 12.3m to 18.53m layoffs'. The daily news, international, dated 24.3.2020. <https://www.thenews.com.pk/print/633754forecast-of-covid-19-pakistan-may-face-12-3m-to-18-53m-lay-offs>.