

Assessment of COVID-19 in the Province Baluchistan, A Study on the Demographics of the Patients

Mir Arsalan¹ and Farah Ahmed²

ABSTRACT

Objective: COVID-19 cases are exponentially surging around the globe. At the time of conducting this study, Pakistan had 7,993 cases and 159 deaths. Out of these positive cases, 432 cases were from Baluchistan. Baluchistan is the basin of the first contact of the virus in Pakistan, as the neighboring region to Iran from where the virus was initially imported.

Study Design: cross sectional study

Place and Duration of Study: This study was conducted at the province-wide in Baluchistan till 10 March to 19th April 2020.

Materials and Methods: A total data of 432 patients were acquired. It was analyzed for demographical characteristics using SPSS version 20.

Results: The most significant proportion of the COVID-19 cases were males 308 (71.3%), and the majority of them belong to the middle age group 21-30 years (23.4%, n=101). Contrary to popular belief, 60.6% (n=262) of these cases had been infected by local spread, while only 28.9% (n=125) were pilgrims (Zaireen) returning from Iran. Data indicates a gradual transition of positive cases from travel history initially to local spread in recent days. Moreover, 146 (33.8%) cases have been reported in just the last five days of acquired data. Quetta and Loralai have displayed the highest COVID-19 attack rate of 14 among all the other districts. Furthermore, the mortality rate was 1.15% and all cases were of age above 40 years.

Conclusion: Our study depicts a fair picture of the COVID-19 demographic trend, the study has clear indications for the provincial, local spread that have been realized by this data along with a spike in cases in the last few days, which is maybe due to non-compliance to physical distancing rules.

Key Words: Coronavirus, COVID-19, Pakistan, Baluchistan

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INTRODUCTION

After the emergence of a cluster of pneumonia cases of unknown etiology in Wuhan, China, the '2019 novel coronavirus'⁽¹⁾ was declared as the causative agent for this outbreak in December 2019 by the World Health Organization. This new member of the coronavirus family, now officially termed as COVID-19, is responsible for causing Severe Acute Respiratory Syndrome (SARS-CoV-2)^(2,3). Subsequent reports of exponential hike in cases in China and multiple other countries came forward in the following two months leading to COVID-19 being declared a pandemic on 11 March 2020⁽⁴⁾.

The earlier cases of COVID-19 traced back to viral exposure from a seafood Market in Wuhan. However, the subsequent cases verified a secondary source of infection, i.e., human-to-human transmission through close contact with an infected person (droplet infection)⁽⁵⁾. COVID-19 is reported to have a higher transmission rate compared to other members of the coronavirus family. It presents with symptoms ranging from mild to severe and sometimes even asymptomatic. The presentation of fever, cough, myalgia, complicated dyspnea, and pneumonia are among the most commonly reported symptoms^(3,5).

At the time of writing this manuscript (19th April 2020), the total number of confirmed cases of coronavirus globally is 2,241,778, with a death toll of 152,551 cases even after rigorous containment and quarantine efforts⁽⁶⁾. Meanwhile, in Pakistan, the current statistics reported are 7,993 cases and 159 deaths from coronavirus⁽⁷⁾.

Amid the initial cases in Pakistan, the numbers had hugely surged in two of its neighboring countries; China and Iran⁽⁸⁾, with which Pakistan shares busy borders. Baluchistan is the South western province of Pakistan and it borders with Iran, the religious travelers

¹. PEI-WHO, Panjgur Balochistan.

². College of Physicians and Surgeons, Karachi

Correspondence: Dr. Mir Arsalan, Disease Surveillance Officer, PEI-WHO, Panjgur Balochistan

Contact No: 03213067458

Email: arsalandurrzai51@gmail.com

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(Zaireen) entering from Iran have introduced the COVID-19 in Pakistan on a bigger scale^(9,10). Therefore, Baluchistan has significant regional importance in the outbreak in Pakistan.

MATERIALS AND METHODS

This study was a cross-sectional, descriptive analysis of all cases of COVID-19 diagnosed province-wide in Baluchistan from 10 March to 19th April 2020. A total of 432 cases have been analyzed in this study. All of the cases in this study were tested by Real-Time Polymerase Chain Reaction (RT-PCR).

The data was analyzed on SPSS version 20. Demographic characteristics were summarized using descriptive statistics. Categorical variables were measured as frequencies and percentages. Data were grouped into age intervals, and cross-tabulations were made for desired characteristics.

RESULTS

A total of 5315 tests were conducted; among them, 432 were positive, and 4883 were negative, as shown in (Table 1). Among infected cases, 154 recovered, and five deaths occurred, while 273 are still active cases, as depicted in the pie chart (Figure 1). The demographic characteristics of patients infected with COVID-19 in Baluchistan are shown in (Table 2). Maximum patients reported were males 308 (71.3%), while 124 (28.7%) were female. The majority of patients 101 (23.4%) belonged to the age group 21-30. Considering the testing facility, the majority of tests 427(98.8%) were conducted in Fatima Jinnah Chest and General Hospital Quetta (FJCGH).

The route of the spread of the virus in Baluchistan (Table 3). It shows that the majority of people 262 (60.6%) were infected through the local spread, among which 165 (38.2%) were affected by contact with positive cases. Furthermore, 128 (29.6%) infected cases had a history of International travel, among which 125(28.9%) were pilgrims returning from Iran at the Taftan quarantine center located at the Pak-Iran border. In comparison, only 8(1.9%) were infected by domestic travel. The prevalence of COVID-19 and its attack rate in each district of the province are described in (Table 4). Most of the cases 328 (75.9%) were from the Quetta district, while the attack rate of the virus in Quetta is observed at 14.

There was a rise observed in the COVID-19 cases with each day in Baluchistan from the first reported case (Table 5). In the initial five days (10th to 15th March), the cases were 17 (3.9%), while in the latest five days' duration (15th to 19th April), the cases were 146 (33.8%) (Figure 2). The route of viral spread with each day is shown in the (Table 6). Initially, the majority of the reported cases had a history of international travel, but as days passed, local spread took the lead in further spread of the virus among the population.

The characteristics of mortality are shown in the (Table 7). 3 out of 5 (0.6%) deceased were males. Among them, 2 (0.4%) were in the age group of 41 – 50 years, and another 2 (0.4%) were among the age group 61 – 70 years. All the deceased cases belonged to the Quetta district. While 3 (0.6%) of the deaths reported had a history of infection through the local spread.

Table No.1: Frequency of the test results.

Total Test Conducted	Positive Cases	Negative Cases
5315	432	4883

Status of Positive Cases till 19th April

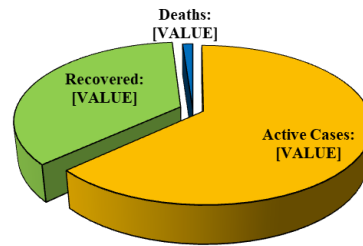


Figure No.1: The status of the COVID-19 positive cases

Table No.2: Demographic Table

Demographics	Frequency (N)	Age (%)
Gender		
Male	308	71.3%
Female	124	28.7%
Age Group		
< 1-year-old	1	0.2%
1 - 10 years	16	3.7%
11 - 20 years	53	12.3%
21 - 30 years	101	23.4%
31 - 40 years	95	22.0%
41 - 50 years	81	18.8%
51 - 60 years	44	10.2%
61 - 70 years	25	5.8%
71 - 80 years	4	0.9%
81 - 90 years	1	0.2%
Lab reporting site		
FJCGH	427	98.8%
Taftan Mobile Lab	3	0.7%

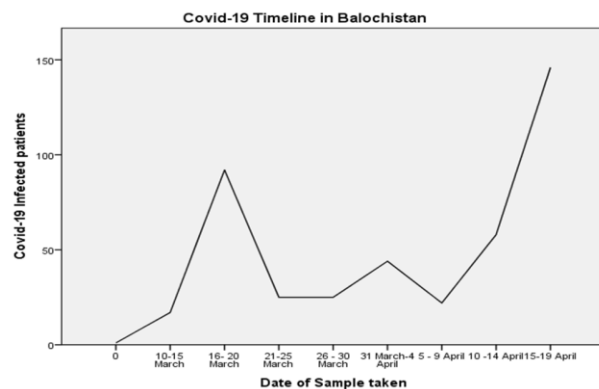


Figure No.2: Timeline of positive cases in Baluchistan

Table No.3: COVID-19 Spread Route

Route of spread	(N)	(%)	Point of Entry	(N)	(%)
International Travel	128	29.6%	Taftan (Pilgrims returning from Iran)	125	28.9%
			Travel from Saudi	2	0.5%
			Travel from UK	1	0.2%
Domestic Travel	8	1.9%	Travel from KPK	2	0.5%
			Raiwand Tablighi	2	0.5%
			Travel from Punjab	3	0.7%
			Travel from Karachi	1	0.2%
Local Spread	262	60.6%	Contact with +ive case	165	38.2%
			Self-Referral	88	20.4%
			Refer from BINUQ	7	1.6%
			SKBZ	2	0.5%

Table No.4: Attack Rate of COVID-19 in districts of Baluchistan

District	Frequency (N)	age (%)	Popu-lation	Attack rate
Quetta	328	75.9%	2275699	14
Jafferabad	18	4.2%	513813	3.5
Mastung	13	3.0%	266461	4.8
Loralai	8	1.9%	54758	14
Pishin	7	1.6%	306177	2.2
Chaman	4	0.9%	433768	9.2
Nushki	4	0.9%	178796	2.2
Killa Abdullah	3	0.7%	146915	2.04
Chaghi	3	0.7%	58386	5.1
Kharan	2	0.5	73981	2.7
Harnai	1	0.2%	75329	1.3
Kechhi	1	0.2%	909116	1
Khuzdar	1	0.2%	802207	1.2
Musakhail	1	0.2%	98265	1
Sibi	1	0.2%	125320	7.9
Sohbatpur	1	0.2%	200538	4.9
Taftan	1	0.2%	18510	5.4
Zhob	1	0.2%	253632	3.9

Table No.5: Timeline of the Positive cases

Date	Frequency (N)	Age (%)
10-15 March 2020	17	3.9%
16- 20 March 2020	92	21.3%
21-25 March 2020	25	5.8%
26 - 30 March 2020	25	5.8%
31 March-4 April 2020	44	10.2%
5 - 9 April 2020	22	5.1%
10 -14 April 2020	58	13.4%
15-19 April 2020	146	33.8%

Table No.6: Virus Spread Timeline with its Route of entry

Date	Route of virus spread		
	International Travel	Domestic Travel	Local Spread
10-15 March 2020	11	0	1
16- 20 March 2020	89	0	0
21-25 March 2020	11	0	3
26-30 March 2020	6	2	11
31 March- 4 April 2020	8	3	33
5 - 9 April 2020	1	1	20
10 -14 April 2020	0	1	57
15-19 April 2020	1	1	137
Total	127	8	262

Table No.7: Characteristics of mortality

Demographics	Deaths/Mortality
Sex	
Male	3
Female	2
Age Group	
41 - 50-year-old	2
51 - 60-year-old	1
61 - 70-year-old	2
District	
Quetta	5
Route of virus spread	
International Travel	2
Domestic Travel	0
Local Spread	3

DISCUSSION

Ever since the first patient infected with COVID-19 was admitted to the hospital on 12 December 2019⁽¹¹⁾_ENREF_2, the world has seen a dramatic and catastrophic increase in the spread of this virus across every continent and almost every country of the world. The rapid control and containment strategies adopted by China showed a reduction of in new cases, but countries like Italy⁽¹²⁾, Spain, UK, Iran and most of Europe and the USA are still struggling to contain the spread and alleviate the burden over their health system⁽¹³⁾

The total number of confirmed cases in Italy as of 19th April 2020 have revealed the concerning number of over 175 thousand with Spain surpassing it with 191726 total cases being reported with a collective mortality rate of over 43 thousand. The current epicenter of the virus, USA is showing a very grim picture of the reach of this virus with over 30 thousand deaths being reported⁽⁶⁾, it has become apparent that the world is facing this pandemic on relatively novel measures with an unprepared air⁽¹⁴⁻¹⁶⁾.

In light of this rapid, we offer a first description of the confirmed cases in the province of Baluchistan, which is realized as the basin of the first contact of the virus in Pakistan. A total of 432 confirmed cases of COVID-19 have been reported from Baluchistan till 19th April.

Among these cases, the majority belong to the age groups of 21-40 years old.

Comparatively, the number of confirmed cases in the province of Punjab is the highest reported of a total of 3,721, followed closely by Sindh with 2,537, and KPK with 1,237 cases reported by 19th April 2020. However, Gilgit Baltistan and Azad Jammu Kashmir and Islamabad show a relatively low number of 263, 51, and 181 confirmed cases. The highest mortality rate recorded was from the province of KPK, with 67 patients deceased, followed closely by Sindh with 56 deaths^[4].

The mortality rate of Baluchistan is recorded at 1.15% as of the day of this article being reported, i.e., 19th April, representing five deaths in the region. Most of the deaths were recorded in patients over 40 years of age. All of the deaths were reported from the district Quetta, and the majority of the deceased had contracted the virus through the local spread, with only two patients succumbing to the disease who had a travel history in the last few months.

The spread route of the virus was divided over the three main sources, with the primary source recognized as international travel. The religious pilgrimage of multiple communities in the months before Iran showed an alarming number of cases confirmed in Pakistan, on their return.

The positive cases increased nine times in the space of a mere 40 days, highlighting another crucial point of the course of the entry of virus in the patients. The route of entry through the local spread of the virus was seen to increase by a drastic number of 137 by 19th April from a single case reported in March 2020. The attack rate was measured with respect to the disease burden of each district, showing district Quetta and Loralai in a most precarious position with an attack rate of almost 14. This concern of high attack rate is also observed in the district of Mastung and Jaffarabad with a relatively high percentage of 4.8 and 3.5, respectively.

A significant contribution of this study is that it provides the first account of the COVID-19 epidemic curves of Pakistan. We observed that the mortality rate is comparatively low at this time; a few probable reasons might be that the age group of patients positive with COVID-19. It may be due to the age factor that has led to a significantly low mortality rate. The geographical and socioeconomic barriers that are making access to timely diagnosis and treatment a big problem, which may also be leading to under-reported cases in Baluchistan. However, this is the first report from Baluchistan, and it may be difficult to predict the course of this virus and its impact in the coming future. All of the cases in this study were confirmed by RT-PCR, which is the only reliable screening test recommended by WHO to assure a COVID-19 patient. However, among the limitations of this study lies the fact that Baluchistan is the least population-dense

province of Pakistan and lacks health-care centers. Therefore, limited testing facilities meant a limited number of people could be screened for the virus. Moreover, the data presented in this study does not include the comorbidities of any patients listed.

CONCLUSION

In light of this study, a clear picture of the current scenario of the spread of COVID-19 in Baluchistan is portrayed, with it being the first account of demographics being reported into the literature from the region. The study points out 60.6% of COVID-19 patients contracting the virus via the local spread with the highest attack rate coming forward from district Quetta and Loralai. Since Baluchistan has a scattered population with an underdeveloped healthcare system in rural areas, only limited testing has been performed so forth, which must not be considered a score point for fewer cases in the region. As suggested by the study, the recovery rate is quite significant in the region, but proper follow up of the recovered cases is still highly recommended to ensure timely notifications to the authorities in case of any reinfections.

Author's Contribution:

Concept & Design of Study:	Mir Arsalan
Drafting:	Farah Ahmed
Data Analysis:	Farah Ahmed, Mir Arsalan
Revisiting Critically:	Mir Arsalan, Farah Ahmed
Final Approval of version:	Mir Arsalan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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