

## Are the Rumours True that COVID was Spread by Pilgrims/Travellers Coming to Baluchistan from the Pakistan Iran Border? A Multidistrict Case Representation Study.

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### Abstract

#### Background

Almost 8000 pilgrims had returned to Pakistan at that time but before the government could set up a quarantine centre, the secondary cases started occurring in the country. Among all these reported cases, 60% were those people who travelled to Iran. The study aimed to assess the demographics of the spread of coronavirus in Baluchistan while also showing the rate of initial transmission of the virus from the Pakistan-Iran border also known as the Taftan Border.

#### Methods

This is a descriptive cross-sectional study from the very first COVID-19 positive tested case i.e. Mar 2019 up till 19th April 2020. Total 5315 COVID-19 tests were conducted, out of which 432 were found to be positive and screened for this study material.

#### Result

A total of 5315 tests were conducted and out of them, 432 were positive, and 4883 were negative. The results showed that 328 cases (75.9%) were from the Quetta district. Quetta and Loralai have displayed the highest COVID-19 attack rate among 14 of all the other districts. The first timeline for the spread of covid-19 was high as the religious pilgrims and other international travellers were entering the country till mid-March.

#### Conclusion

A significant contribution of this study provides the first account of the COVID-19 epidemic curves of Pakistan. 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.

#### Key Words

COVID-19, Attack Rate, Route of Spread, International Travellers, Baluchistan-Pakistan

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#### Background

The world is currently facing a fourth wave of coronavirus with COVID-19 variant known as delta virus.<sup>1</sup> Presently, in Pakistan, 22781 deaths have been reported and 47331 active cases are up till now Pakistan. In Baluchistan 1571 active cases were reported during the period of data collection. The novel coronavirus, commonly known as COVID-19, emerged from the Wuhan city of China,<sup>2</sup> was declared as the causative agent for this outbreak in December 2019 by the World Health Organization. COVID-19 is the new member of the coronavirus family and is responsible for causing Severe Acute Respiratory Syndrome (SARS-CoV-2).<sup>3,4</sup> COVID-19 is reported to be highly contagious compared to other members of the coronavirus family. It presents with symptoms ranging from mild to severe and sometimes even asymptomatic.<sup>4,5</sup> The spread and exponential hike in cases in China and multiple countries came forward in the following two months leading to COVID-19 being declared as pandemic on 11 March 2020.<sup>6</sup>

Iran reported its first case of coronavirus on 19th February 2020, just one week before Pakistan's outbreak, which was known to be spread by international travellers between Pakistan and Iran. As per the stats, in Iran, 0.2 million active cases were reported with only 1% in severe condition, while in Pakistan 33k active cases had been reported. 26th February 2020 in Pakistan, when the first two cases of COVID-19 were reported in Karachi and Islamabad,<sup>7,8</sup> and right after 15 days the cases spiked to above twenty. Out of them, 14 cases were from Sindh, 5 from Gilgit Baltistan, and 1 from Baluchistan was reported. Upon further investigation, it was shown that all these cases had a history of recent visits to Iran, Syria, and London. It brings into notice that the possible cause of transmission was through the Taftan border, where 1800 pilgrims were tested and screened at quarantine centres that were established at the site of the border.<sup>9</sup>

The reports showed that the religious travellers (Zaireen) entering from Iran have introduced the COVID-19 in Pakistan on a bigger scale.<sup>10,11</sup> The first case was reported in Pakistan on 26th February 2020 through a Pakistani citizen who travelled

to Iran recently. After a few days, it was said that many pilgrims who travelled to Iran by air and the Taftan border were responsible for the initial spread of the virus in the country. Iran couldn't close its border during the outbreak because a large amount of revenue is generated by these religious pilgrims. As per the reports, it has been shown that every year 0.7 million Pakistani Shia Muslims visit cities of Iran such as Qom, Tabriz, Tehran, and Mashhad. These people also visit Najaf, Karbala, Samarra, and Baghdad in Iraq while also Damascus in Syria. At first, when Pakistan couldn't stop these religious travellers from Iran due to the lack of proper testing for COVID-19.<sup>12</sup> However, when the infection was detected in two people, the government started taking precautionary measures and imposed thermal scanning on the Taftan border. Where all pilgrims were tested before crossing the border. The government also closed the borders for two months after the first outbreak and after two months the activities were resumed with proper social distancing and precautionary measures.<sup>13</sup> Therefore, Baluchistan has significant regional importance in the outbreak in Pakistan.

Almost 8000 pilgrims had returned to Pakistan at that time but before the government could set up a quarantine centre, the secondary cases started occurring in the country. After a month later of the first COVID-19 case, on 24th March 2020, the cases increased up to 990 and 6 deaths. Among all these reported cases, 60% were those people who travelled to Iran. While on 24 March 2020, Iran reported 237049 cases and 1812 deaths.<sup>14</sup> This figure shows that Iran was also struggling with covid-19 positive cases at that time, which was not identified, and due to the lack of testing, Iran couldn't impose lockdown or ban crossing from the border before it was too late.<sup>15</sup> The data we have collected has helped us to find out the spread of COVID-19 in Pakistan, and also the possible cause of the spread of positive numbers of cases that were detected by the religious pilgrims through the Taftan border. 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. The study aimed to assess the demographics of the spread of coronavirus in Baluchistan while also showing the rate of initial transmission of the virus from the Pakistan-Iran border also known as the Taftan Border.

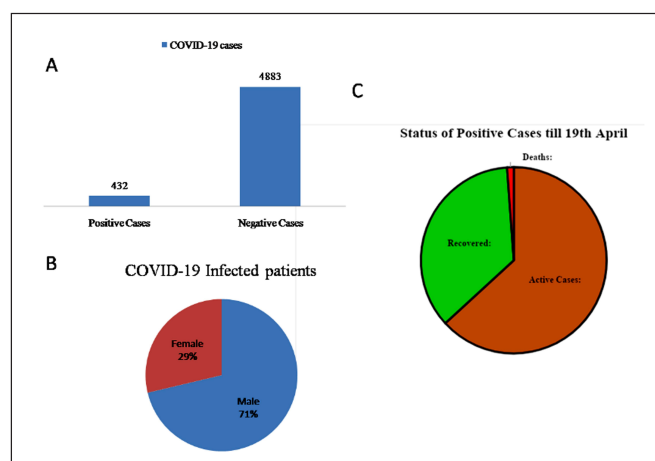
### Material and Methods

This is a descriptive cross-sectional study from the very first COVID-19 positive tested case i.e. March 2019 up till 19th April 2020. Total 5315 COVID-19 tests were conducted, out of which 432 were found to be positive and screened for this study material. On 95% Confidence Interval with a P-Value of 0.005 is considered to find the true hypothesis. All these COVID-19 positive cases were confirmed by Real-Time Polymerase Chain Reaction (RT-PCR) to scrutinized for inclusion criteria. Travelers and visitors who arrived from different cities (inter Pakistan) were excluded from the study sample. Since it engaged a huge number of the population, verbal consent in local language was taken and a spreadsheet of consent was drawn

where all study sample population signed their affirmation. Ethical approval was obtained before the data collection from the Government of Baluchistan, Provisional Emergency Operations Centre. Confidentiality of the data was maintained by keeping the identity of the patient hidden and data is restricted to the primary investigator only. The data and material will be represented on request. The data was analysed on SPSS version 20. The demographic characteristics were summarized using descriptive statistics. All the categorical variables were measured as frequencies and percentages. Data were grouped into age intervals, and cross-tabulations were made for desired characteristics. Plotting and graphical representation of the data was drawn with the help of MS Excel.

### Results

A total of 5315 tests were conducted and out of them, 432 were positive, and 4883 were negative, as shown in Figure 1A. Among these positive cases, 154 were recovered, while five deaths occurred, with 273 still active cases at the time of the study, as depicted in the pie chart (Figure 1C). The demographic characteristics of patients infected with COVID-19 in Baluchistan include gender, age group, and lab reporting site as most of the covid-19 positive patients reported were 308 males (71.3%), while 124 (28.7%) were female (Figure 1B). The majority of patients 101 (23.4%) belonged to the age group 21-30. Considering the testing facility, 427 tests (98.8%) were conducted in Fatima Jinnah Chest and General Hospital Quetta (FJCGH). After 15 days of the first reported case of COVID; in mid-March, the frequency of transmission of the virus and its route of spread in Baluchistan is shown in Table 2. 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. The spread route of the virus was divided over the three main sources, with the primary source recognized as international travel. The religious



**Fig 1. COVID-19 Cases. "A" shows the total number of positive and negative cases. "B" Shows the distribution of positive cases into males and females. "C" The status of positive cases till April.**

**Table 1: COVID-19 Spread Route in Baluchistan Province.**

ROUTE OF SPREAD	(N)	(%)	POINT OF ENTRY	(N)	(%)
International Travel	128	29.6%	Taftan (Pilgrims returning from Iran)	125	2
			Travel from Saudi	1	28.9%
			Travel from the UK	0.5%	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%

pilgrimage of multiple communities in the months before Iran showed an alarming number of cases confirmed in Pakistan, on their return.

Data indicates a gradual transition of positive cases from travel history initially to local spread in recent days. 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 centre located at the Pak-Iran border. In comparison, only 8 people (1.9%) were infected via domestic travel. The prevalence of COVID-19 and its attack rate in each district of the province are described in (Table 3). The results showed that 328 cases (75.9%) were from the Quetta district.

**Table 2: Attack Rate of COVID-19 in districts of Baluchistan**

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

Quetta and Loralai have displayed the highest COVID-19 attack rate of 14 among all the other districts. Most of the pilgrims that entered the country moved to the bigger cities like Quetta and Loralai due to better facilities. However, geographically both cities lie at a greater distance from each other. The total number of covid positives was highest in Quetta followed by Jafferabad, Mastung, Loralai, Pishin, Chaman, Nushki, and other cities mentioned in Table 3. Moreover, the attack rate was also high in Quetta, and Loralai followed by Chaman, Sibi, Taftan, chaghi, sohbatpur, mastung, zhob, jafferabad and other

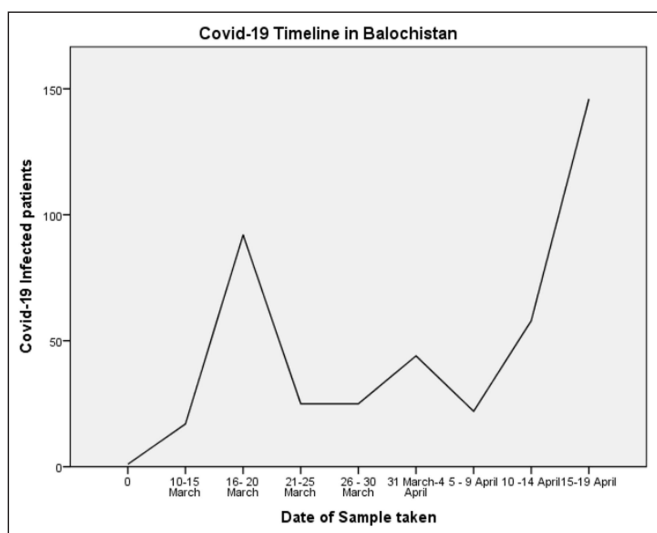
**Table 3: Virus Spread Timeline with its Route of entry during the data collection time period in Baluchistan**

Date	Route of virus spread		
	Taftan pilgrims	Domestic travel	Local spread
10-15 March 2020	10	0	1
16- 20 March 2020	88	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
<b>Total</b>	<b>125</b>	<b>8</b>	<b>262</b>

small cities.

The first timeline for the spread of covid-19 was high as the religious pilgrims and other international travellers were entering the country till mid-March. These people also tested positive for covid-19 but as the time passed the government imposed a ban on pilgrims and international travellers by closing all the borders of the country at the end of the march. In the first week of April, the spread of covid-19 started increasing and in the second week the numbers increased from 20 to 57 and in the

third week, it jumped to 137, which was surprisingly high. The spread of COVID-19 in the month of April was observed through the local people as all the borders were already closed and all the pilgrims and international travellers became the primary source for spreading the virus in a country. With each passing day, the rise in the COVID-19 cases was observed in Baluchistan from the first reported case. In the initial five days (10<sup>th</sup> to 15<sup>th</sup> March), the cases were 17 (3.9%), while in the latest five days' duration (15<sup>th</sup> to 19<sup>th</sup> April), the cases jumped to 146 (33.8%) (Figure 2). The route of viral spread with each day is shown in Table 4. Initially, the majority of the reported



**Fig 2. Timeline of positive cases in Baluchistan**

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.

### Discussion

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. The study points out 60.6% of COVID-19 patients contracting the virus via the local spread, as in contact with positive cases, with the highest attack rate coming 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 far, 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. 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 19<sup>th</sup> 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.<sup>6</sup>

The mortality rate of Baluchistan is recorded at 1.15% as of the stats of this study, 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 positive cases increased nine times in the space of a mere 40 days, highlighting another crucial point of the course of the entry of the 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 19<sup>th</sup> April from a single case reported in March 2020. The attack rate was measured concerning 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 districts of Mastung and Jaffarabad with a relatively high percentage of 4.8 and 3.5, respectively.

When COVID-19 was declared a global pandemic, all the countries around the world started taking precautionary measures to save their country from the virus. In Asia, countries such as Iran, China and India closed their borders right away but still confirmed positive cases were found in their countries. In Pakistan, where religious pilgrims also visit the holy place of Makkah once a year for performing Hajj, also became a question mark and Saudi Arabia constantly tried to take strict measures to avoid further spread of covid into their country. In 2020, when no covid vaccine was available, the government tried to impose strict implications on the religious pilgrims. For that reason, only 1000 pilgrims were allowed to perform Hajj with valid covid negative reports and pre-hajj quarantine arrangements.<sup>16</sup> After a year, in 2021, when vaccination was available the government imposed a mandatory requirement for all pilgrims to have a valid vaccination card. Every year more than 2.5 million people used to attend Hajj in Saudi Arabia but due to covid-19 the number reduced to 1000 and Saudi Arabia faced a major loss in their economy as well, because the major revenue is generated through these religious activities.<sup>17</sup>

In 2020, The coronavirus cases started grabbing attention at the end of January 2020 and then the number of positive cases started increasing till March. As the cases spiked, the UAE imposed its first lockdown on 30th March.<sup>17</sup> The majority of the Pakistanis who work in Dubai and other cities of UAE had to move back to Pakistan in a hurry while many couldn't reach. The rapid control and containment strategies adopted by China showed a reduction in new cases, but countries like Italy,<sup>19</sup> Spain, the UK, Iran, and most of Europe and the USA were still struggling to contain the spread and alleviate the burden

over their health system.<sup>20</sup> The total number of confirmed cases in Italy as of 19<sup>th</sup> 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 epicentre of the virus, the USA is showing a very grim picture of the reach of this virus with over 30 thousand deaths being reported,<sup>21</sup> A total of 432 confirmed cases of COVID-19 have been reported from Baluchistan till 19<sup>th</sup> April. Among these cases, the majority belong to the age groups of 21-40 years old. It has become apparent that the world is facing this pandemic on relatively novel measures with an unprepared air.<sup>22,23</sup> Major limitation of this study is the fact that Baluchistan is the least dense population province of Pakistan and lacks healthcare facilities. 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

Results of our study provide a significant contribution towards first pandemic covid-19 curves in Pakistan. We observed that most of the pilgrims who crossed the Taftan border were infected with covid-19 and before any proper measure the virus broke out in the province. After that, the government took measures to stop the spread of the virus across the country, and quarantine centres were established near the border. 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.

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