

OVERVIEW on STATUS of COVID 19 in PAKISTAN and its PREVALENCE in WORLD PERSPECTIVE

Ali Umar^{1*}

¹Department of Zoology, University of Okara, Okara, Pakistan

ABSTRACT

INTRODUCTION

Coronaviruses (CoVs) belong to family Coronaviridae with having a single-stranded RNA genome and covered by a proteinoid envelope. The viruses from this family can infect birds and mammals including humans. MERS and SARS are two human diseases that are caused by these viruses. In the past, these two infections affected ten thousand people with a fatality rate of 37% & 10% for MERS-CoV and SARS-CoV respectively. Earlier, CoVs affected the human population when Severe Acute Respiratory Syndrome (SARS) and Middle Eastern syndrome (MERS) emerged in Middle Eastern countries including Saudi Arabia in 2012. COVID-19 a pandemic viral infection caused by corona virus which outbreaks from Wuhan and spreads all around the world (Wu and McGoogan 2020).

According to world o meter currently confirmed cases in all affected countries are 10709132 along with 517337 deaths and 5802861 recoveries (as of 10:00 PKT, September 20, 2020). China controls this pandemic by imposing lockdown and quarantine measures. Outside China, South Korea was the first country that was infected by this virus. They also slower the pandemic rate through quarantine measures without imposing lockdown.

According to world o meter, Pakistan ranked 19th among 233 countries facing the worst pandemic. To slow down the pandemic on March 22, 2020, Prime Minister of Pakistan declared a 14-day lockdown till 5th April to break the chain of coronavirus prevalence, followed by, continuing nationwide lockdown till 30th April 2020. However, adding new cases and deaths are increasing day by day.

The compiled data on COVID-19 from different sources including web pages, official websites, research papers. For Pakistan, it was taken from the covid19 in Pakistan.org a data-sharing portal that provides daily updates about new and total

confirmed pandemic cases, deaths, and recoveries all around the country. This data is similar to the information provided by the Health Advisory Platform by the Ministry of National Health Services Regulations and Coordination, Government of Pakistan, and also with *Pakistan Health Research Council* (PHRC). We collected information on death and recovery for the period from February to September 20, 2020, for the most affected provinces, states, and even districts. Data were extracted from the World health organization, world o meter, and John Hopkins University for all other affected countries (WHO 2020; World o Meter, 2020). CFR is defined as the ratio between the total number of deaths due to pandemic COVID-19 and total infected individuals from pandemic COVID-19. The case recovery rate is the subtraction of CFR from a hundred.

PREVALENCE RATE, CASE FATALITY AND CASE RECOVERY RATE OF COVID-19 AROUND THE GLOBE

COVID-19 outbreak starts from Wuhan, China in late 2019 and shortly spread in 213 countries and destinations with 31,932,500 confirmed cases till September 20, 2020 (World o Meter, 2020). Patients of COVID-19 were firstly reported in Japan, Thailand, and the southern part of Korea after an outbreak from China. However, the prevalence and death rates were higher in Italy (Onder et al., 2020). Some factors such as gathering, traveling for commercial purposes, or tourism may enhance prevalence. Table 1 shows the Prevalence rate, CRR, and CFR of COVID-19 around the world. Chile has a much higher prevalence rate and lowest in China. The total number of cases and deaths and recoveries are higher in the USA than any other country in the world. However, CFR is much higher in the UK followed by Italy with 15.55 % and 14.6% respectively.

*Correspondence to: Ali Umar, Department of Zoology, University of Okara, Okara, Pakistan, Tel: 00923454912171 Email: aumar2102@gmail.com

Received: November 05, 2020; Accepted: August 30, 2021; Published: September 10, 2021

Citation: : Umar A (2021) overview on status of covid 19 in pakistan and its prevalence in world perspective G.J.L.S.B.R, 7, p165

Copyright: © 2021 Umar A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Country	No. of Cases	Population at risk in Million	Recoveries	Deaths	Prevalence rate %	CRR %	CFR %
U.K	4,03,551	67.88601	-	41,825	0.59	89.6	10.4
Italy	3,00,897	60.46183	2,19,670	35,738	0.5	88.1	11.9
Mexico	7,05,263	128.9328	5,06,732	74,348	0.55	89.5	10.5
Spain	6,82,267	46.75478	-	30,904	1.46	95.5	4.5
Iran	4,29,193	83.99295	3,63,737	24,656	0.51	94.3	5.7
U.S	70,97,937	332.6391	43,46,110	2,05,471	2.13	97.1	2.9
Germany	2,77,176	83.78394	2,47,900	9,491	0.33	96.6	3.4
Brazil	45,95,335	211.716	39,45,627	1,38,159	2.17	97	3
Peru	7,76,546	32.97185	6,29,094	31,586	2.36	95.9	4.1
India	56,40,496	1326.093	45,81,820	90,021	0.43	98.4	1.6
Turkey	3,06,302	84.33907	2,69,696	7,639	0.36	97.5	2.5
Chile	4,48,523	19.1162	4,23,176	12,321	2.35	97.3	2.7
Pakistan	3,05,671	215.8923	2,93,916	6,416	0.14	97.9	2.1
Russia	11,15,810	145.9345	9,17,949	19,649	0.76	98.2	1.8
Saudi Arabia	3,30,798	34.81387	3,12,684	4,542	0.95	98.6	1.4
China	85,30716	1394.0	80,505	4,634	0.01	94.6	5.4

Table 1: Prevalence rate, CRR and CFR of COVID-19 around the world

Fig 1: Case fatality rate and case recovery rate around the world

STATUS OF COVID-19 IN PAKISTAN

The first case of COVID-19 was reported on February 26, 2020, when a student returned from Iran and tested positive in Karachi. On March 18, 2020 cases started to register from all around the country including capital and autonomous territories. Till September 20, 2020, 305,671 cases, 293,916 recoveries, and 6416 deaths were registered around the country. Most cases (133,626) are reported from Sindh followed by Punjab (98,368). Moreover, deaths were higher in Sindh. Vaccine trials are started with the collaboration of a Chinese pharmaceutical company named Sinopharm in April 2020. Table 2 elaborates all confirmed cases, deaths, recoveries, prevalence, CFR, and CRR in provenances of Pakistan. Higher CFR was recorded in AJK and lowest in the Baluchistan

Province/State	Total cases	Population at risk (Million)	Deaths	Recoveries	Prevalence rate %	CFR %	CRR %
AJK	2,517	4.05	67	2,257	0.06	2.66	97.34
Baluchistan	14,269	12.34	145	12,969	0.12	1.02	98.98
Gilgit Baltistan	3,450	1.5	81	3,036	0.23	2.35	97.65
Islamabad	16,124	2.01	180	15,529	0.8	1.12	98.88
KPK	37,317	35.53	1,258	35,500	0.11	3.37	96.63
Punjab	98,368	110.01	2,226	94,773	0.09	2.26	97.74
Sindh	1,33,626	47.89	2,459	1,28,239	0.28	1.84	98.16

Table 2: COVID-19 Prevalence, CFR & CRR in Provinces and states of Pakistan

Fig 2: Percentage prevalence of COVID 19 confirmed cases among total population in Pakistan

IN PUNJAB

On 12th March 2020, the Government of Punjab, Pakistan announced a health and medical emergency in the cabinet meeting. Quarantine facilities were established in DG Khan for people returning from Iran. The administration decided to close markets, shopping malls, public places, and even transport on March 22, 2020. The first death of 57 years old Afesayab resident of Sheikhpura in Mio Hospital, Lahore was reported on March 24, 2020. Till now a higher number of positive cases (49482) were recorded in the provincial capital Lahore and least in Jauhrabad (295). Pandemic has been spread to the entire province in all 36 districts.

District	Population	Total cases	Total deaths	Prevalence%	CFR%	CRR%
Attock	18,83,556	614	9	0.03	1.47	98.53
Bahawalnagar	29,81,919	543	4	0.02	0.74	99.26
Bahawalpur	36,68,106	1821	37	0.05	2.03	97.97
Bhakkar	16,50,518	367	5	0.02	1.36	98.64
Chakwal	14,95,982	308	2	0.02	0.65	99.35
Chiniot	13,69,740	335	7	0.02	2.09	97.91
Dera Ghazi Khan	28,72,201	1727	21	0.06	1.22	98.78
Faisalabad	78,73,910	6027	237	0.08	3.93	96.07
Gujranwala	50,14,196	3883	85	0.08	2.19	97.81
Gujrat	47,56,110	2969	39	0.06	1.31	98.69
Hafizabad	11,56,957	619	6	0.05	0.97	99.03
Jhang	27,43,416	444	13	0.02	2.93	97.07
Jhelum	12,22,633	552	5	0.05	0.91	99.09
Kasur	34,54,996	692	16	0.02	2.31	97.69
Khanewal	29,21,986	369	3	0.01	0.81	99.19
Jauharabad	12,81,299	295	4	0.02	1.36	98.64
Lahore	1,11,26,285	49482	938	0.44	1.9	98.1
Layyah	18,24,230	396	3	0.02	0.76	99.24
Lodhran	17,00,620	411	8	0.02	1.95	98.05

Mandi Bahaudin	15,93,292	533	6	0.03	1.13	98.87
Mianwali	15,46,094	480	25	0.03	5.21	94.79
Multan	47,45,109	6073	137	0.13	2.26	97.74
Muzaffargarh	43,22,009	1061	16	0.02	1.51	98.49
Narowal	17,09,757	301	5	0.02	1.66	98.34
Nankana Sahib	13,56,374	433	17	0.03	3.93	96.07
Okara	30,39,139	427	9	0.01	2.11	97.89
Pakpattan	18,23,687	322	4	0.02	1.24	98.76
Rahim Yar Khan	48,14,006	1323	68	0.03	5.14	94.86
Rajanpur	19,95,958	329	9	0.02	2.74	97.26
Rawalpindi	54,05,633	7892	284	0.15	3.6	96.4
Sahiwal	25,17,560	803	16	0.03	1.99	98.01
Sargodha	37,03,588	1383	25	0.04	1.81	98.19
Sheikhpura	34,60,426	1248	22	0.04	1.76	98.24
Sialkot	38,93,672	2539	117	0.07	4.61	95.39
Toba Tek Singh	21,90,015	794	11	0.04	1.39	98.61
Vehari	28,97,446	692	13	0.02	1.88	98.12

Table 3: COVID 19 cases, deaths, prevalence, CFR, CRR in different districts of Punjab

IN SINDH

Sindh is a second populated province of Pakistan with 47.89 Million population. The total number of COVID 19 positive cases was 133,626 till September 20, 2020, in Sindh. The first COVID 19 positive case was reported in Karachi Pakistan; a

student with foreign traveling history. Table 4 represents COVID 19 prevalence, district wise total cases, case fatality rate, and recovery rate. A much higher prevalence rate is reported in Karachi followed by Korongi & Malir (19802), Hyderabad (4804) and Sukkur. However, the case fatality rate is higher in the area of Malir and Korongi.

District	Population	Total Cases	Deaths	Prevalence %	CFR %	CRR %
Karachi	2972639	75425	1871	2.5	2.5	97.5
Hyderabad	2201079	4804	99	0.2	2.1	97.9
Sukkur	1487903	3815	43	0.3	1.1	98.9
Ghotki	1647239	3533	42	0.2	1.2	98.8
Khairpur	2405523	3027	23	0.1	0.8	99.2
Larkana	1524391	2151	49	0.1	2.3	97.7
Nawabshah	2012847	1912	9	0.1	0.5	99.5
Jamshoro	993142	1437	8	0.1	0.6	99.4
Mirpurkhas	1505876	1254	13	0.1	1	99
Sanghar	2057057	1927	23	0.1	1.2	98.8
Jacobabad	1006297	1001	9	0.1	0.9	99.1
Dadu	1550266	1244	7	0.1	0.6	99.4
Korongi, Malir	4465920	19802	64	0.4	0.3	99.7
Kashmore	1089169	439	14	0	3.2	96.8
NaushahroFeroze	1612373	993	12	0.1	1.2	98.8
Q. Shahdadkot	1341042	1622	17	0.1	1	99
Badin	1804516	1094	23	0.1	2.1	97.9
Thatta	979817	1349	9	0.1	0.7	99.3

Sujawal	781967	547	27	0.1	4.9	95.1
TandoAllahyar	836887	808	7	0.1	0.9	99.1
Shikarpur	1231481	1765	29	0.1	1.6	98.4
Tharparkar	1649661	1191	0	0.1	0	100
TandoM. Khan	677228	580	9	0.1	1.6	98.4
Matiali	769349	606	7	0.1	1.2	98.8
Umerkot and others	1073146	1300	45	0.1	3.5	96.5

Table 4: Trend of COVID 19 among various districts of Sindh

IN KPK

KPK ranked 3rd in COVID 19 cases but the case fatality rate is much higher compared to other provinces of Pakistan. Peshawar which is the capital of KPK has 13959 (till September 20, 2020) positive cases and hit the highest prevalence rate. However, the case fatality rate reported higher in Bajaur and Abbottabad. Table 5 shows total cases of COVID 19, Total deaths, prevalence rate, CFR %, district wise.

District	Population	Total cases	deaths	Prevalence %	CFR %	CRR %
Bajaur	10,93,684	605	33	0.06	5.45	94.55
Nowshera	15,18,540	1031	47	0.07	4.56	95.44
Batagram	4,76,612	388	16	0.08	4.12	95.88
Kohat	11,12,452	833	33	0.07	3.96	96.04
Bannu	12,11,006	243	8	0.02	3.29	96.71
Peshawar	43,33,770	13959	593	0.32	4.25	95.75
Swabi	16,24,616	524	30	0.03	5.73	94.27
Mardan	23,73,061	1270	59	0.05	4.65	95.35
Hangu	5,18,798	212	8	0.04	3.77	96.23

Abbottabad	13,32,912	1670	91	0.13	5.45	94.55
Dera Ismail Khan	16,95,688	479	19	0.03	3.97	96.03
Swat	23,09,570	3078	101	0.13	3.28	96.72
Karakoram	7,06,299	485	22	0.07	4.54	95.46
Mansehra	15,56,460	1031	47	0.07	4.56	95.44
Mohmand	4,66,984	130	2	0.03	1.54	98.46
Malakand	7,20,295	1632	40	0.23	2.45	97.55
Buner	8,97,319	486	11	0.05	2.26	97.74
Orakzai	2,54,356	141	2	0.06	1.42	98.58
Lower Dir	14,35,917	1723	41	0.12	2.38	97.62
Upper Dir	9,46,421	937	12	0.1	1.28	98.72
Charsadda	16,16,198	915	15	0.06	1.64	98.36
Haripur	10,03,931	770	13	0.08	1.69	98.31
LakkiMarwat	9,02,541	74	1	0.01	1.35	98.65
Khyber	9,86,973	755	10	0.08	1.32	98.68
Kurram	4,48,310	652	13	0.15	1.99	98.01
Lower Chitral	2,78,122	517	5	0.19	0.97	99.03
Shangla	7,57,810	438	3	0.06	0.68	99.32
Upper Chitral	1,69,240	202	1	0.12	0.5	99.5
Tank	4,28,274	94	3	0.02	3.19	96.81
Kolai Pallas	2,75,003	17	0	0.01	0	100
South Waziristan	6,74,065	94	3	0.01	3.19	96.81

North Waziristan	5,43,254	15	1	0	6.67	93.33
Upper Kohistan	3,06,337	43	0	0.01	0	100
Lower Kohistan	2,02,913	67	0	0.03	0	100
Tor Ghar	1,71,395	21	0	0.01	0	100

Table 5: Statistical representation of COVID 19 in KPK

IN BALUCHISTAN

Baluchistan is not much populated as Punjab and Sindh. 14269 cases were reported among 12.34 million population. 145 patients died with a 1.02% case fatality rate due to corona however 12969 people recovered. Most cases 9625 of COVID 19 are reported in Quetta, the capital city. The total number of deaths is also higher in Quetta, but CFR was higher in Chaghi at 1.44 %. 948 and 569 cases of COVID 19 are reported in Jafarabad and Mastung respectively. All other cities carry 2597 cases and 27 deaths (Table 6).

District	Population	Total Cases	Deaths	Prevalence %	CFR %	CRR %
Quetta	22,72,669	9625	95	0.42	0.99	99.01
Jafarabad	5,13,813	948	11	0.18	1.16	98.84
Mastung	2,66,461	569	5	0.21	0.88	99.12
Chaghi	3,00,000	487	7	0.16	1.44	98.56
Others	89,91,465	2597	27	0.03	1.04	98.96

Table 6: District wise COVID 19 statistics in Baluchistan

IN GILGIT BALTISTAN

Gilgit Baltistan is the northern region which is administrated by Pakistan. COVID 19 also affected this region. 3450 people were reported as COVID 19 positive where 3036 have been recovered and 28 people died. Gilgit, Baltistan, and Diamer are three divisions of this region. 1721 people are tested positive in Gilgit division, 1134 in Baltistan, and 595 in the Diamer region. 44 patients have died in the Gilgit region whereas 21 and 16 patients have died in Baltistan and Diamer region respectively.

Division	Population	Total Cases	Deaths	Prevalence %	CFR %	CRR %
Gilgit	527000	1721	44	0.33	2.56	97.44
Baltistan	229387	1134	21	0.49	1.85	98.15
Diemer	518000	595	16	0.11	2.69	97.31

Table 7: Population, total cases, deaths, and CFR in GilgitBaltistan

IN AJ&K

Among 4.05 million people 2517 people are affected by COVID 19, 2257 people recovered successfully, and 67 patients had died. Among 10 districts of AJ&K, Muzaffarabad was the most affected area and least in Neelam Valley. 951 cases are confirmed in Muzaffarabad whereas 44 cases are reported in Neelam Valley. 342 and 237 people are affected by COVID 19 in Kotli and Bhimber respectively. CFR is recorded higher in Poonch district (9.73%) followed by Sudhanoti (6.25%) and Bagh (Table 8).

District	Population	Total cases	Deaths	Prevalence %	CFR%	CRR%
Mirpur	4,56,200	521	8	0.11	1.54	98.46
Kotli	7,74,194	342	7	0.04	2.05	97.95
Bhimber	4,20,624	237	11	0.06	4.64	95.36
Muzaffarabad	6,50,370	951	17	0.15	1.79	98.21
Hattian	2,30,529	75	2	0.03	2.67	97.33
Neelam Valley	1,91,251	44	1	0.02	2.27	97.73
Poonch	5,00,571	113	11	0.02	9.73	90.27
Haveli	1,52,124	47	1	0.03	2.13	97.87

Bagh	3,71,919	123	5	0.03	4.07	95.93
Sudhanoti	2,97,584	64	4	0.02	6.25	93.75

The highest number of deaths was recorded in Sindh followed by Punjab, KPK, and Gilgit Baltistan when the total number of deaths was a count (Fig.3).

Fig 3: percentage of death rate recorded in different provenance of Pakistan

CONCLUSION AND SUMMARY

COVID-19 outbreak starts from Wuhan, China in late 2019 and enters Pakistan on February 26, 2020. However, the influx of positive cases was started on March 18, 2020. Till September 20, 2020, a total of 305,671 cases, 293,916 recoveries, and 6416 deaths are registered around the country. Most cases are reported in Sindh (133626) followed by Punjab (98368) and KPK (37317). Currently, COVID 19 controlling vaccine is not invented yet but vaccine trials are started with the collaboration of a Chinese pharmaceutical company named Sinopharm in April 2020.

REFERENCES

1. Wu Z, & McGoogan JM. (2020) Characteristics of and important lessons from the coronavirus disease (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *Jama*, 323(13), 1239-3.
2. Govt. of Pakistan. (September 20, 2020). Coronavirus in Pakistan - Confirmed Cases. COVID-19 Health Advisory Platform by Ministry of National Health Services Regulations and
3. 2002 to Coordination. <http://covid.gov.pk/stats/pakistan>
4. https://scholar.google.co.in/scholar?hl=en&as_sdt=0%2C5&q=WHO.+%28cited+June+29%2C+2020%29.+Summary+of+probable+SARS+cases+with+onset+of+illness+from+1+November+31+July+2003.+Available+from%3A+https%3A%2F%2Fwww.who.int%2Fcsr%2Fsars%2F+country%2Ftable2004_04_21%2Fen%2F.&btnG=
5. WorldOmeter. (September 20, 2020). Countries where COVID-19 has spread. <https://www.worldometers.info/coronavirus/countries-where-coronavirus-has-spread/>
6. Onder G, Rezza G, & Brusaferro S. (2020) Case-fatality rate and characteristics of patients dying in relation to COVID-19 in Italy. *Jama*, 323(18), 1775-1.