

The Effect of COVID-19 Pandemic on Hospital Visits and Admissions in Paediatric Department, Benazir Bhutto Hospital, Rawalpindi

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^{1,2,3,4} Manuscript Writing

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Article Processing

Received: 28/06/2021

Accepted: 21/08/2021

Cite this Article: Asghar, R.M., Ashraf, R.R., Saheel, K., Hussain, A. The Effect of COVID-19 Pandemic on Hospital Visits and Admissions in Paediatric Department, Benazir Bhutto Hospital, Rawalpindi. *Journal of Rawalpindi Medical College*. 31 Aug. 2021; 25 COVID-19 Supplement-1, 133-137. DOI: <https://doi.org/10.37939/jrhc.v25i1.1718>

Conflict of Interest: Nil

Funding Source: Nil

Access Online:



Abstract

Objectives: To assess the effect of the COVID-19 Pandemic on hospital visits and admissions of non-COVID-19 patients in 2020 compared to 2019.

Material and Methods: This retrospective study was conducted in 2021 at the Department of Pediatrics, Benazir Bhutto Hospital, Rawalpindi comparing the data of non-COVID-19 patients visits and admissions from January to December 2019 with non-COVID-19 patients visits and admissions from January to December 2020. The relevant data was retrieved from the Pediatric Department record on a pre-designed study questionnaire. Data was entered and analyzed in SPSS version-24 for descriptive statistics and analysis.

Results: The total OPD visits in 2019 were 112682 patients compared to 63859 patients in 2020 showing a 43.33% reduction. The total number of patients who visited pediatric emergency were 80274 in 2019 and 41182 in 2020, showing a decline of 48.65%. There were a total of 6151 admissions in the paediatric ward in 2019 compared to 2778 admissions in 2020 recording a decline of 54.84%. The admissions in the Neonatal Unit were 5544 in 2019 and 3528 in 2020 with a reduction of 36.36%. The admissions in PICU in 2019 were 2685 and in 2020 the admissions decline to 2011 which is a 25.1% reduction.

Conclusion: There was a significant decline in both hospital visits and admissions in 2020 compared to those in 2019.

Keywords: Non-COVID-19, visits, admissions.

Introduction

Coronavirus disease 2019 (COVID-19) is caused by the coronavirus which belongs to a family of Coronaviridae and is a RNA virus.^{1,2,3} COVID-19 illness was first reported in Wuhan, province of China in late 2019. These patients presented with pneumonia of unknown origin.⁴ The disease then spread rapidly and by April 2020 most of the countries world over-reported the cases. By April 2020 over one million confirmed cases and more than 50,000 deaths were reported by World Health Organization (WHO).⁵ The WHO declared it as a global pandemic.⁶

The objective of the study is to assess the effect of the COVID-19 Pandemic on hospital visits and admissions of non-COVID-19 Patients in 2020 compared to 2019. The study is important because any significant reduction in patient visits particularly in emergency and admissions could result in delays in treatment and complications in non-COVID-19 cases.

Non-COVID-19 hospitalizations and visits decreased in all age groups during 2020.⁷ A significant reduction (33%) in pediatric hospital admission was noted in 2020 compared to the same in 2019.⁸ The decrease in admissions occurred for all types of illnesses⁹. Emergency visits also observed a decline during the lockdown of 2020¹⁰. Not only emergency department visits were decreased but a decline in non-urgent conditions was also observed in 2020.¹¹

Materials and Methods

This retrospective study was conducted in 2021 at the Department of Pediatrics, Benazir Bhutto Hospital, Rawalpindi comparing the data of non-COVID-19

patients' visits and admissions from January 2019 with non-COVID-19 patients' visits and admissions from January 2020 to December 2020 in the Pediatric Department, Benazir Bhutto Hospital, Rawalpindi. All infants and children up to 12 years of age suffering from non-COVID-19 illnesses were included in the study. All suspected and proven COVID-19 patients in the above age group were excluded from the study. The relevant data was retrieved from the Pediatric Department record on a pre-designed study questionnaire. Data was entered and analyzed in SPSS version-24 for descriptive statistics and analysis.

Results

The total OPD visits in 2019 were 112682 patients compared to 63859 patients in 2020 showing a 43.33% reduction. The total number of patients who visited paediatric emergency was 80274 in 2019 and 41182 in 2020, showing a decline of 48.65%. There were a total of 6151 admissions in the paediatric ward in 2019 compared to 2778 admissions in 2020 recording a decline of 54.84%. The admissions in the Neonatal Unit were 5544 in 2019 and 3528 in 2020 with a reduction of 36.36%. The admissions in PICU in 2019 were 2685 and in 2020 the admissions declined to 2011 which is a 25.1% reduction.

The detail of hospital visits and admissions for each month are given in Table 1 and Table 2. There is a decline in hospital visits and admissions in all months of 2020 except for OPD visits in February 2020.

Table 1: OPD & Emergency visits in 2019 and 2020 Paediatric Department, Benazir Bhutto Hospital, Rawalpindi

S.No.	Months	OPD Visits			Emergency Visits		
		2019	2020	%Decreased/ increased (+)	2019	2020	%Decreased
1.	January	12240	9485	22.51%	6721	6347	5.56%
2.	February	9254	10255	+ 9.76%	5711	5459	4.41%
3.	March	9324	7014	24.77%	5153	4637	10.01%
4.	April	9858	2444	75.21%	6100	2195	64.01%
5.	May	8161	2225	72.74%	6984	2982	57.30%
6.	June	7322	627	91.44%	6804	1299	80.90%
7.	July	8832	1250	85.85%	5852	1590	72.83%
8.	August	7537	3973	47.04%	6206	2977	52.03%
9.	September	8940	7436	16.82%	5072	3987	21.39%
10.	October	9999	7754	22.45%	9778	4045	58.63%

11.	November	9923	5705	42.51%	7386	3072	58.40%
12.	December	11292	5691	49.60%	8447	2592	69.31%
TOTAL:		112682	63859	43.33%	80274	41182	48.70%

Table 2: Admissions in Paediatric Wards, NICU & PICU, Benazir Bhutto Hospital, Rawalpindi

S. No.	Months	Admission in Wards			Admission in NICU			Admission in PICU		
		2019	2020	%Decreased	2019	2020	%Decreased	2019	2020	%Decreased /increased(+)
1.	January	680	500	26.47%	507	468	7.69%	297	341	+14.8 %
2.	February	570	545	4.39%	438	306	30.14%	229	246	+7.42%
3.	March	500	340	32.00%	430	309	28.14%	195	205	+5.12%
4.	April	440	126	71.36%	422	233	44.79%	164	109	33.54%
5.	May	560	152	72.86%	465	271	41.72%	213	151	29.11%
6.	June	520	59	88.65%	528	178	66.29%	221	71	67.87%
7.	July	400	88	78.00%	482	162	66.39%	186	84	54.84%
8.	August	441	101	77.10%	530	250	52.83%	207	130	37.20%
9.	September	520	206	60.38%	571	370	35.20%	231	158	31.60%
10.	October	402	280	30.35%	435	334	23.22%	215	175	18.60%
11.	November	450	190	57.78%	396	329	16.92%	215	165	23.26%
12.	December	670	191	71.49%	440	318	22.73%	330	176	46.67%
TOTAL:		6151	2778	54.84%	5544	3528	36.36%	2685	2011	25.10%

The change in the number of patients of various diseases in 2020 compared to 2019 is given in Tables 3, 4 & 5.

Table 3: OPD, Emergency visits and ward admissions in 2019 and 2020 Paediatric Department

S. No.	Disease	OPD Visits			Emergency Visits			Admissions		
		2019	2020	% Decreased	2019	2020	% Decreased	2019	2020	% Decreased
1	ARI(excluding pneumonia)	20192	17106	15.28%	945	179	81.05%	340	92	72.94%
2	Pneumonia	1849	1554	15.95%	2187	1859	15%	2109	1043	50.55%
3	Asthma	1275	880	30.98%	557	458	17.7%	151	93	38.41%
4	Diarrhea	14806	10125	31.6%	7534	5447	27.7%	2775	1128	59.35%
5	Celiac disease	80	36	55%	09	05	44.44%	24	09	62.5%
6	Acute Viral Hepatitis	1540	540	64.94%	1123	110	90.20%	166	81	51.2%
7	Chronic Liver Disease	150	125	16.67%	110	90	18.1	30	20	33.3
8	Enteric Fever	930	746	19.78%	889	600	32.51%	318	58	81.76%
9	Congenital Heart Disease	490	267	45.51%	125	35	72%	142	125	11.9%
10	Seizures Disorders	1399	1289	7.86%	1970	920	53.3%	921	204	77.85%
12	Meningoencephalitis	330	67	79.7%	322	223	30.75%	670	353	47.31%
13	Cerebral Palsy	480	268	44.17%	386	200	48.19%	244	101	58.61%
14	Renal Failure	30	18	40%	10	5	50%	12	10	16.67%
15	Urinary Tract Infections	2230	2200	1.34%	1967	1680	14.59%	113	96	15.04%
16	Nephrotic Syndrome	27	10	62.96%	24	2	91.67%	32	27	15.6%

17	Diabetes Mellitus	07	04	42.86%	24	13	45%	18	14	22.2%
19	Anemia	1187	987	16.85%	1284	196	84.74%	288	125	56.6%
20	Leukemia	5	2	60%	4	2	50%	4	2	50%
21	Cardiomyopathy	5	05	0%	4	1	75%	6	3	50%
22	Congestive Cardiac Failure	5	5	0%	4	2	50%	6	4	33.33%
23	Cystic fibrosis	15	6	60%	24	0	100%	6	4	33.33%
25	Malnutrition	760	186	75.53%	115	17	85.22%	90	25	72.22%

Table 4: NICU Admissions in 2019 and 2020 Paediatric Department

S. No	Disease	Admissions		
		2019	2020	% Decreased
1	Birth Asphyxia	1270	752	40.79
2	Neonatal Sepsis	1190	727	38.9
3	Neonatal Jaundice	889	577	35.10
4	Prematurity	1181	711	39.80
5	Neonatal Meningitis	118	103	12.71
6	Pneumonia	95	89	6.31
7	Tetanus	14	10	28.57
8	Congenital Heart Disease	161	71	55.90
9	Haemolytic Disease Of New Born	62	26	58.06
10	Others	140	105	25

Table 5: OPD, Emergency visits and ward admissions in 2019 and 2020 Paediatric Department

S. No	Disease	OPD Visits			Emergency Visits			Admissions		
		2019	2020	% increased	2019	2020	% increased	2019	2020	% increased
1	Acute Flaccid Paralysis	34	36	5.55	18	24	25	18	22	18.18
2	Thalassemia	160	240	33.33	289	380	23.95	57	85	32.94
3	Septicemia	120	230	47.82	112	264	57.58	357	419	14.80

Discussion

COVID-19 has affected most of the countries all over the world. Different aspects of life have been affected by COVID-19.

This study has shown a significant decrease in hospital OPD visits, emergency visits, and admissions in different sections of the Pediatric Department, Benazir Bhutto Hospital, Rawalpindi during 2020 compared to 2019. Similar results have been documented by other studies.⁷⁻¹²

In our study, the emergency visits were declined by 48.65%. A study from Germany has also documented a 63.8% drop in pediatric emergency visits with a drop occurring in both communicable and non-communicable diseases in 2020 compared with 2019.¹³ Our study has shown a reduction of admissions of 54.85%, 50.1%, and 36.36% in Wards, PICU & NICU respectively. A study by Ramos-Lacuey B, et al. has shown a comparable 33% reduction in paediatric hospital admissions in 2020 compared to the same in

2019.⁸ Another study has shown similar results in decline in admissions of 32% in 2020 compared to 2019.¹⁴

A Chinese study has also documented a decline in the number of outpatients and inpatients from January to May 2020 compared with those during the same period in 2019.¹⁵ One study has shown that the reduction in ER visits occurred for all types of illnesses in 2020 compared with 2019 with an 81% reduction in ER admissions.¹⁶

Lockdowns have played a role in the reduction in pediatric hospital visits as shown by a study by Peeters D et al.¹² Another factor responsible for a reduction in hospital visits and admissions was fear and public warnings.¹⁷

Schools closures are also a factor for the decline in pediatric hospital visits because the transmission of infectious diseases by the air-borne route and feco-oral route decreased, resulting in a decrease in common cold, bronchiolitis, otitis media, and gastroenteritis.¹⁸

A study however has documented an increase in more severe cases during 2020 compared to 2019, thereby stressing the need for early and timely assessment of pediatric patients to prevent the disease from presenting later in a more severe form.¹¹

Telemedicine also reduced the number of hospital visits. Telemedicine may reduce visits of patients that are not acute cases but it cannot be an alternative to monitoring and changes in treatment timely, that an occur only in admitted patients.¹⁴

Conclusion

There was a significant decline in both hospital visits and admissions in 2020 compared to those in 2019. An alternative approach is needed when priority is preventing the spread of COVID-19 to reduce the morbidity and mortality of non-COVID-19 illnesses due to decrease hospital visits and hospital-based treatment.

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