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Outpatient Attendance in COVID Pandemic Lockdown: An Observational Study

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ABSTRACT

Objectives: The objectives of this study were to analyze the profile of outpatient department (OPD) attendance of a tertiary care hospital during pre- and post-pandemic lockdown period.

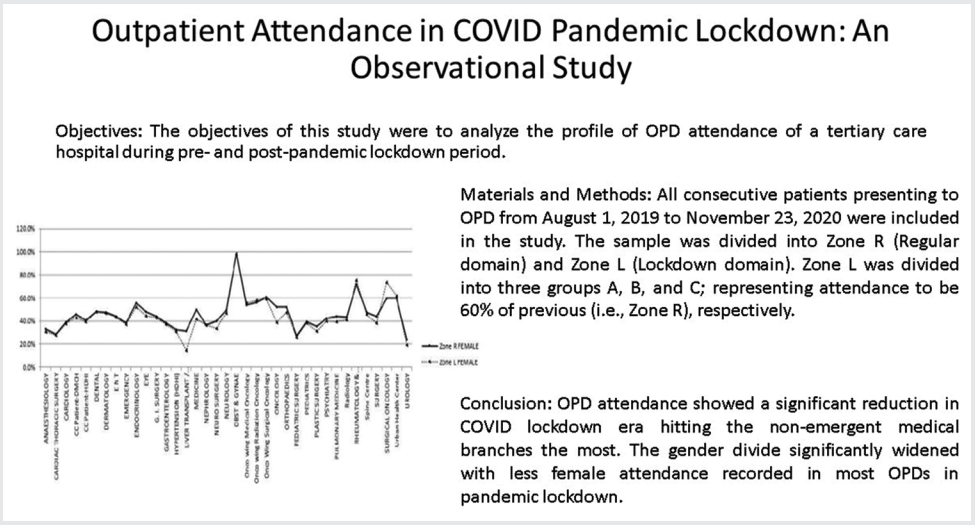
Materials and Methods: All consecutive patients presenting to OPD from August 1, 2019 to November 23, 2020 were included in the study. The sample was divided into Zone R (Regular domain) and Zone L (Lockdown domain). Zone L was divided into three groups A, B, and C; representing attendance to be <30%, 30–60%, and >60% of previous (i.e., Zone R), respectively. The patient gender, intradepartmental, and inter departmental OPD attendance data were collected and analyzed.

Results: n = 428,322 patients attended the OPD in the study period. 301,586 patients presented in Zone R and 126,736 presented in Zone L (P = 0.000). Zone L recorded an OPD attendance drop to 42% of Zone R. The least attended an OPD (Group A) was ophthalmology, ENT, dermatology, surgery, and orthopedics versus highest attendance (Group C) was noticed in emergency OPD and oncology with a moderate decline in the rest (P = −0.00, 0.00, and 0.00, respectively). Both male and female attendance in the OPD showed a decline; however, the gender divide was apparent with significantly low women attendance in all the departments (P = 0.00).

Conclusion: OPD attendance showed a significant reduction in COVID lockdown era hitting the non-emergent medical branches the most. The gender divide significantly widened with less female attendance recorded in most OPDs in pandemic lockdown. Apt administrative measures could prove fruitful by an improved OPD attendance and its psychosocial implications to a society with less disease burden.

Keywords: COVID 19, Outpatients, Lock down

ABSTRACT IMAGE



INTRODUCTION

SARS-CoV-2 has brought unprecedented catastrophe to mankind. Besides physical illness, psychological pressures, the economic brunt is being faced by major sections of society. As the society curtails on its basic expenditure, several health-related issues are also nipped off. Baring major emergencies, the patient population avoids any routine visits, semi-elective or elective procedures.

To curb the disease transmission, many countries have adopted the policy of lockdown, an action for mass quarantine. The government of India ordered a nationwide lockdown for 3 weeks on March 24, 2020, which was subsequently extended and still remains in effect with some relaxations at the time of writing.

The COVID-19 pandemic has dramatically changed how outpatient care is delivered in health care practices. Several previous reports reveal a lower footfall to their outpatient departments (OPD). In the present review, we attempt to analyzed data on changes in visit volume of OPD attendance in our hospital during the pandemic lockdown and pre-pandemic era.

MATERIALS AND METHODS

Study design and study population

The outpatient attendance data were collected from a tertiary care hospital of North India, a non-profit organization with a high footfall and volume. The research was performed with patient or public involvement. All consecutive patients presenting to OPD from August 1, 2019, to November 23, 2020, were included in the study**.** The attendance of all the departments of the hospital was considered and the percentage of patients presenting in each was calculated. The lockdown in India in the first wave of COVID-19 was initiated on March 24, 2020.[1] The sample was divided into two time domains, a pre-lockdown domain labeled as Zone R (Regular Domain) from August 1, 2019, to March 23, 2020, and a lockdown domain labeled as Zone L (Lockdown Domain) from March 23, 2020, to November 23, 2020. The number and percentage of patients presenting overall in all departments together and then individually in each were compared in the two domains. The attendance in Zone L was further segregated into three groups: A, B, and C; representing attendance to be <30%, 30–60%, and >60% of the previous (i.e., Zone R). The male and female attendance was recorded and noticed for each of the departments.

The study was conducted under real-life conditions of daily clinical practice and in accordance with the Declaration of Helsinki. Study protocol was approved by the Institutional Ethics Committee and it conformed to ethical guidelines of the 1975 Declaration of Helsinki (*DMCH/R&D/2020/145*).

Statistical analysis

Data were described in terms of frequencies (number of cases) and relative frequencies (percentages) as appropriate. For comparing categorical data, Chi-square (χ^2) test was performed. A probability value (*P* value) <0.05 was considered statistically significant. All statistical calculations were done using (Statistical Package for the Social Science) SPSS 21version (SPSS Inc., Chicago, IL, USA) statistical program for Microsoft Windows.

RESULTS

A total sample size of 428,322 patients attended the OPD in the study period. Of these, 301,586 patients presented in

Zone R (Regular period) versus 126,736patients in Zone L (Lockdown period) (P = 0.000). Besides overall reduction in OPD volume in Zone L, the individual attendance of each department in Zone L was also significantly reduced [Table 1 and Figure 1]. Collectively, only 42% of Zone R's attendance was seen in Zone L [Table 2].

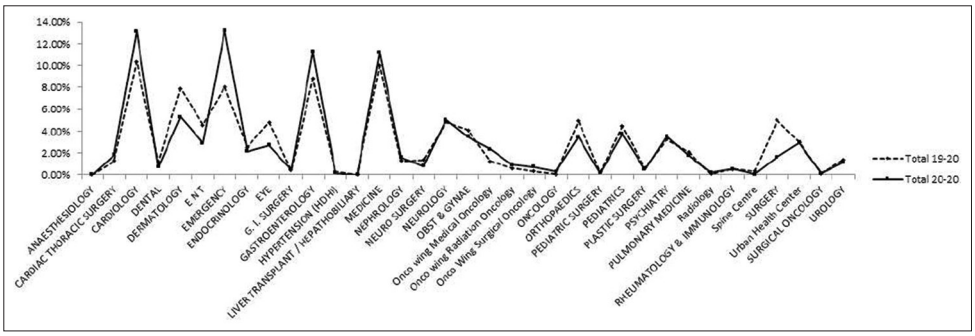


Figure 1: Comparison of attendance in various departments in Zone L and Zone R.

Table 1: OPD attendance in various departments in Zone L and Zone R.

Department	Zone R (regular zone)		Zone l (lockdown zone)		*P*-value
Anesthesiology	54	0.02%	13	0.01%	0.080
Cardiac thoracic surgery	3899	1.29%	2316	1.83%	0.000
Cardiology	31222	10.35%	16661	13.15%	0.000
Dental	3471	1.15%	899	0.71%	0.000
Dermatology	23825	7.90%	6679	5.27%	0.000
ENT	13741	4.56%	3689	2.91%	0.000
Emergency	24279	8.05%	16722	13.19%	0.000
Endocrinology	7531	2.50%	2714	2.14%	0.000
Eye	14454	4.79%	3420	2.70%	0.000
G. I. Surgery	1242	0.41%	603	0.48%	0.003
Gastroenterology	26524	8.79%	14305	11.29%	0.000
Hypertension (HDHI)	913	0.30%	191	0.15%	0.000
Liver transplant/hepathobiliary	54	0.02%	20	0.02%	0.700
Medicine	30172	10.00%	14199	11.20%	0.000
Nephrology	3838	1.27%	2008	1.58%	0.000
Neurosurgery	4144	1.37%	1030	0.81%	0.000
Neurology	14669	4.86%	6400	5.05%	0.010
Obst&gyne	12350	4.10%	4415	3.48%	0.000
Oncowing medical oncology	3748	1.24%	2951	2.33%	0.000
Oncowing radiation oncology	1766	0.59%	1152	0.91%	0.000
Oncowing surgical oncology	961	0.32%	901	0.71%	0.000
Oncology	190	0.06%	364	0.29%	0.000
Orthopedics	14889	4.94%	4358	3.44%	0.000
Pediatric surgery	696	0.23%	221	0.17%	0.000
Pediatrics	13404	4.44%	4741	3.74%	0.000
Plastic surgery	1800	0.60%	591	0.47%	0.000
Psychiatry	9865	3.27%	4494	3.55%	0.000
Pulmonary medicine	6289	2.09%	2219	1.75%	0.000
Radiology	268	0.09%	275	0.22%	0.000
Rheumatology and immunology	1598	0.53%	671	0.53%	1.000
Spine center	1024	0.34%	46	0.04%	0.000
Surgery	15095	5.01%	2073	1.64%	0.000
Urban health center	9040	3.00%	3741	2.95%	0.420
Surgical oncology	347	0.12%	169	0.13%	0.120
Urology	4224	1.40%	1485	1.17%	0.000
Total	**301,586**	100.00%	**126,736**	100.00%	0.000

OPD: Outpatient department

Table 2: Percentage reduction in OPD attendance of Zone L.

Department	Zone R (regular zone)	Zone l (lockdown zone)	Percentage of previous
Anesthesiology	54	13	24.07
Cardiac thoracic surgery	3899	2316	59.40
Cardiology	31222	16661	53.36
Dental	3471	899	25.90
Dermatology	23825	6679	28.03
ENT	13741	3689	26.85
Emergency	24279	16722	68.87
Endocrinology	7531	2714	36.04
Eye	14454	3420	23.66
G. I. Surgery	1242	603	48.55
Gastroenterology	26524	14305	53.93
Hypertension (HDHI)	913	191	20.92
Liver transplant/hepathobiliary	54	20	37.04
Medicine	30172	14199	47.06
Nephrology	3838	2008	52.32
Neurosurgery	4144	1030	24.86
Neurology	14669	6400	43.63
Obst&Gyne	12350	4415	35.75
Oncowing medical oncology	3748	2951	78.74
Oncowing radiation oncology	1766	1152	65.23
Oncowing surgical oncology	961	901	93.76
Oncology	190	364	191.58
Orthopedics	14889	4358	29.27
Pediatric surgery	696	221	31.75
Pediatrics	13404	4741	35.37
Plastic surgery	1800	591	32.83
Psychiatry	9865	4494	45.55
Pulmonary medicine	6289	2219	35.28
Radiology	268	275	102.61
Rheumatology and immunology	1598	671	41.99
Spine center	1024	46	4.49
Surgery	15095	2073	13.73
Urban health center	9040	3741	41.38
Surgical oncology	347	169	48.70
Urology	4224	1485	35.16
Total	**301586**	**126736**	**42.02**

OPD: Outpatient department

In Zone L, Group A (<30% of previous) consisted of the least attended OPDs, Group B (30–60% of previous) consisted of moderately attended OPDs, and Group C (>60% of previous) were the OPDs with maximum attendance during the lockdown phase. The least attended OPDs include ophthalmology, ENT, dermatology, orthopedics, neurosurgery, anesthesia, and general surgery. Moderate attendance was noted in pediatric surgery, plastic surgery, urology, pulmonary medicine, pediatrics, obstetrics and gynecology, endocrinology, urban health center, rheumatology, neurology, psychiatry, medicine, nephrology, cardiology, and cardiothoracic surgery. Maximum attendance was observed in oncology with its medical, surgical and radiation wings, and in emergency OPD. Furthermore, a statistically significant rise in attendance in Zone L as compared to Zone R was noticed in oncology and radiology (P = 0.003, 0.600 respectively) [Table 3]. The gender description of our subject population was noticed and separated into male and female subsets. A significant decline in OPD attendance was apparent among both the sexes in Zone L versus Zone R. However, the gender divide was significantly higher with relatively a smaller number of females presenting in the lockdown era. A statistically significant reduction in number of women presenting in Zone L versus Zone R was noticed in cardiology, emergency, endocrinology, ophthalmology, medicine, neurosurgery, neurology, oncology, orthopedics, psychiatry, pulmonary medicine, surgery, and urology departments [Table 4 and Figure 2].

Table 3: Group stratification of OPD attendance of Zone L.

OPD attendance as compared to previous	Percentage	Departments	*P*-value
Group A			
<30%	4.49	Spine center	
	13.73	Surgery	
	20.92	Hypertension	
	23.66	Eye	
	24.07	Anesthesiology	
	24.86	Neuro surgery	
	25.90	Dental	
	26.85	ENT	
	28.03	Dermatology	
	29.27	Orthopedics	0.00
Group B			
30–60%	31.75	Pediatric surgery	
	32.83	Plastic Surgery	
	35.16	Urology	
	35.28	Pulmonary medicine	
	35.37	Pediatrics	
	35.75	Obst&Gyne	
	36.04	Endocrinology	
	37.04	Liver transplant/ Hepathobiliary	
	41.38	Urban health center	
	41.99	Rheumatology and immunology	
	43.63	Neurology	
	45.55	Psychiatry	
	47.06	Medicine	
	48.55	G. I. Surgery	
	48.70	Surgical oncology	
	52.32	Nephrology	
	53.36	Cardiology	
	53.93	Gastroenterology	
	59.40	Cardiac thoracic surgery	0.00
Group C			
>60%	68.87	Emergency	
	78.74	Medical oncology	
	65.23	Radiation oncology	
	93.76	Surgical oncology	
	191.58	Oncology	
	102.61	Radiology	0.00

OPD: Outpatient department

DISCUSSION

The year 2020–2021 has brought the mankind and medical profession at the crossroads with a calamity never before seen. A hospital is nurtured primarily through it is outpatient visits besides the visits to the emergency department. The attendance to the outpatient department is reflective of the care provided by the hospital and also the care sought by the public at large. The data from several institutes documented reduction in the out-patient department during the pandemic and lockdown phase.[2-4]

As expected, in the present study, the visit to out-patient departments were significantly reduced during the lockdown phase. This reduction can be attributed to the overall decrease in elective or preventive visits such as annual health check-ups, fear of transmission of infection among health workers, and public and travel restrictions implemented by the government at large.[3] While maximum reduction was seen in Ophthalmology, ENT, Dermatology, Dental, Anesthesia, Neurosurgery, and Orthopedics OPD, the least reduction in patient attendance was seen the emergency wing and oncology (inclusive of medical, radiation, and surgical oncology). Rest all the OPDs documented a moderate (30–60% attendance of previous) reduction in OPD attendance and these reductions were statistically significant. These OPD trends are consistent with several previous reports documenting a fall in OPDs with a smaller number of emergent or critical procedures and issues. However, a rebound increase in these OPDs with patients presenting with chronic ailments could be expected in times to come.[3] It was interesting to note that besides emergency visits the number of patient reduction in the OPD department of oncology was the least, which is very encouraging since any withdrawal of chemotherapy or radiotherapy in carcinomatous patients could mean a worsening stage of carcinogenesis and rapid deterioration and loss of human life. It could also be reflective of inability of primary care centers and primary care physicians to render medical services to sick oncological patients with active disease.[5-7]

Another interesting finding in our study was the disparity in female attendance to the various OPDs. Gender bias in seeking health care by women has been reported even in the pre-COVID era.[1,8-11] This study documents a further reduction in health-care seeking behavior in women presenting to the out-patient department of the hospital during the pandemic which is of statistical significance. Although, the trend for reduced female attendance was seen in all the OPDs, the statistically significant reduction was seen in cardiology, emergency, endocrinology, ophthalmology, gastroenterology, medicine, neurosurgery, neurology, oncology, orthopedics, and psychiatry departments (P = 0.050, 0.011, 0.001, 0.001, 0.012, 0.000, 0.000, 0.004, 0.003, 0.000, 0.009, 0.006, 0.000, and 0.004, respectively).

As the mankind boggles in hands of nature and COVID pandemic peaks, waxes and wanes, the provision of healthcare to the needy is of utmost importance. Notwithstanding the fall in OPD attendance, serious attempts should be made to deliver healthcare to the recipient at their doorstep. Telemedicine can be

Table 4: Gender discrepancy of OPD attendance in Zone L versus Zone R.

Department	ZONE R		ZONE L		*P*-value	ZONE R	ZONE L
	Male	Female	Male	Female		Female%	Female%
Anesthesiology	36	18	9	4	1.000	33.33	30.77
Cardiac thoracic surgery	2783	1116	1662	654	0.740	28.62	28.24
Cardiology	19138	12084	10362	6299	0.050	38.70	37.81
Dental	1798	1673	467	432	0.940	48.20	48.05
Dermatology	12470	11355	3549	3130	0.240	47.66	46.86
ENT	7688	6053	2084	1605	0.880	44.05	43.51
Emergency	14948	9331	10501	6221	0.011	38.43	37.20
Endocrinology	3326	4205	1294	1420	0.001	55.84	52.32
Eye	7511	6943	1890	1530	0.001	48.04	44.74
G. I. Surgery	695	547	343	260	0.720	44.04	43.12
Gastroenterology	16381	10143	9015	5290	0.012	38.24	36.98
Hypertension	617	296	132	59	0.730	32.42	30.89
Liver transplant/hepathobiliary	37	17	17	3	0.230	31.48	15.00
Medicine	15074	15098	8294	5905	0.000	50.04	41.59
Nephrology	2437	1401	1275	733	1.000	36.50	36.50
Neurosurgery	2488	1656	679	351	0.000	39.96	34.08
Neurology	7433	7236	3381	3019	0.004	49.33	47.17
Obst&gyne	203	12147	68	4347	0.670	98.36	98.46
Oncowing medical oncology	1728	2020	1307	1644	0.144	53.90	55.71
Oncowing radiation oncology	774	992	482	670	0.300	56.17	58.16
Oncowing surgical oncology	375	586	371	530	0.340	60.98	58.82
Oncology	91	99	222	142	0.003	52.11	39.01
Orthopedics	7110	7779	2278	2080	0.000	52.25	47.73
Pediatric surgery	505	191	163	58	0.790	27.44	26.24
Pediatrics	8137	5267	2907	1834	0.460	39.29	38.68
Plastic surgery	1164	636	406	185	0.800	35.33	31.30
Psychiatry	5673	4192	2688	1806	0.009	42.49	40.19
Pulmonary medicine	3528	2761	1337	882	0.006	43.90	39.75
Radiology	151	117	162	113	0.600	43.66	41.09
Rheumatology and immunology	448	1150	165	506	0.090	71.96	75.41
Spine center	537	487	25	21	0.880	47.56	45.65
Surgery	8449	6646	1274	799	0.000	44.03	38.54
Surgical oncology	139	208	45	124	0.003	59.94	73.37
Urban health center	3639	5401	1431	2310	0.030	59.75	61.75
Urology	3219	1005	1197	288	0.004	23.79	19.39
Total	**160,730**	**140,856**	**71,482**	**55,254**	0.000	46.71	43.60

OPD: Outpatient department

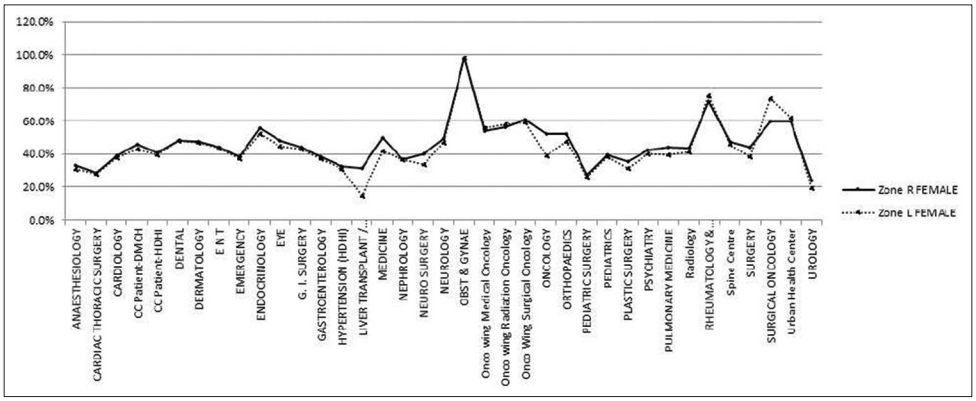


Figure 2: Comparison of female attendance in outpatient department in Zone L versus Zone R.

of respite[2,3,7] and it can be supported by an organized schemata from hospital administration bodies organizing smooth, hassle free, and less time-consuming visits to the hospitals.[5,6] An improved OPD attendance could make not only the point of care health delivery to recipients but shall also foresee a major reduction in chronic ailments and psychological issues which could prove to be detrimental if permitted to accumulate.

CONCLUSION

OPD attendance has shown a significant reduction in COVID pandemic era especially in the non-emergent fields. Pre-existent gender divide in OPD presentation has increased all the more in the COVID pandemic era. It is imperative that measures such as telemedicine and organized protocols ensuring smooth, hassle free, and rapid OPD visits are encouraged. This could foresee a relatively healthy society with less chronic ailments and psychosocial issues.

Authors' contributions

Shibba Takkar Chhabra, Gurleen Kaur, Namita Bansal, Harsh Kishore, Vivek Gupta, Gurbhej Singh, Bhupinder Singh, Abhishek Goyal, Rohit Tandon, Mamta Bansal, Naved Aslam, Bishav Mohan, Gurpreet Singh Wander – contributed in planning, conduct, and reporting of the work described in the article and being responsible for the overall content as guarantor(s).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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