

Impact of COVID-19 epidemics in paediatric morbidity and utilisation of Hospital Paediatric Services in Italy

We read with great interest the article by Pata et al published online on June 2 in the Journal.¹

Indeed, the current COVID-19 epidemic in Italy and the associated 2-month (March-April) strict lockdown have impacted on the overall epidemiology and use of adult and paediatric medical resources—also due to dramatic changes in lifestyle.

There is a growing concern that children and infants, although experiencing an overall lower incidence and severity of the COVID-19 disease, can feature 'collateral damages' of the epidemics and the associated consequences, including an inappropriately reduced utilisation of healthcare paediatric services.

We performed a retrospective, multicentre study comparing the periods March-April of 2019 and 2020, with the aim to assess the hospital referrals of children aged 0-14 years in two tertiary centres located in Italian areas differently affected by COVID-19 (North Biella and South Bari).

A total of 1654 children were referred and managed in these two urgency paediatric departments. A significant, 84% absolute decrease in daily number of visits (3.7 vs 23.4; $P < .001$) and a 75% decrease in daily admissions (0.3 vs 1.2; $P < .001$) occurred in 2020 compared with 2019 (Table 1). When clustering the analysis for type

of morbid condition (upper/lower respiratory tract infections, unexplained fever, gastrointestinal disorders, skin rashes, genito-urinary diseases, neurological-seizures, acute traumatism, poisoning), a 75%-to-96% reduction occurred for all the different morbidities that prompted to seek medical attention. The only exception was the number of children who eventually underwent urgent surgery, remaining unvaried (0.1/day in both periods).

Compared with 2019, during the COVID-19 epidemics children were significantly more often referred for acute surgical conditions, acute traumatism and seizures, vouching for a generally higher severity of the clinical patterns that prompted children to hospital. Accordingly, the rate of hospitalisation was 90% higher in 2020 (0.9 vs. 0.5%; $P < .001$). Of note, we managed only 2 children with confirmed COVID-19 infection, and their course was uneventful.

These data show that the COVID-19 epidemics in Italy produced the paradoxical effect to decrease, instead of increasing, referrals for paediatric consultations and admissions to hospital. An overall decreased burden of paediatric morbidity during the lockdown period, with no day-care/school attendance, hence decreased circulation of pathogens in the community, might largely

TABLE 1 Comparison between the two periods: mean number of daily visits overall and for types of morbidities, and *relative proportions on the total number of visits*

	Pre-COVID (March-April 2019)	During COVID (March-April 2020)	Variation 2020 vs 2019	OR	95% CI	P-value
Total number of visits in paediatric urgency care	1428	226	-84%			
Mean number of daily visits	23.4	3.7	-84%	0.14	0.45-0.68	<.001
Mean number of daily admissions	1.2 [5.0%]	0.3 [8.8%]	-75%	1.78	1.15-2.76	.02
Respiratory (URTI + LRTI)	5.5 [23.5%]	0.4 [11.9%]	-92%	0.50	0.35-0.72	<.001
Gastrointestinal	3.5 [14.8%]	0.4 [19.7%]	-88%	0.65	0.43-0.98	.03
Surgical	0.1 [0.3%]	0.1 [2.2%]	=	6.65	2.41-18.31	.002
Traumatism/accidents	4.6 [19.8%]	1.1 [29.2%]	-76%	1.47	1.19-1.83	.001
Poisoning	1 [0.2%]	0	-100%	-	-	NS
Skin/dermal/cutaneous	1.6 [6.7%]	0.2 [4.4%]	-87%	0.74	0.71-2.59	.22
Genito-urinary	0.4 [1.9%]	0.1 [4%]	-75%	2.12	1.07-4.17	.04
Unexplained fever	2.6 [11.4%]	0.2 [6.2%]	-96%	0.54	0.32-0.91	.01
Neurological/seizures	0.4 [1.6%]	0.1 [3.1%]	-75%	1.89	0.87-4.06	.10

account for these findings. At the same time, these data raise concerns since much of the referrals' reduction might be attributable also to the parents' fear to go to hospitals under the current epidemic conditions. It is possible that an inappropriate choice of not referring to hospital a child who in fact needs medical attention has a long-term negative impact on paediatric health. We therefore advise to continue following up and monitoring over time the main health indicators in vulnerable paediatric populations living in areas affected by this epidemic.

CONFLICT OF INTEREST

The authors have nothing to disclose related to this article.

Paolo Manzoni¹ 
Maria Angela Militello¹
Lorenzo Fiorica¹
Anna Rita Cappiello²
Mariano Manzionna²

¹Department of Maternal-Infant Medicine, University Hospital 'Degli Infermi', Ponderano (Biella), Italy
²UOC Pediatrics and Neonatology, San Paolo Hospital, ASL Bari, Bari, Italy

Correspondence

Paolo Manzoni, Department of Maternal-Infant Medicine, University Hospital 'Degli Infermi', Via dei Ponderanesi, 2, 31785 Ponderano (BI), Italy.
Email: paolomanzoni@hotmail.com

ORCID

Paolo Manzoni  <https://orcid.org/0000-0003-1340-3493>

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