

Commentary

COVID-19 in children in Bangladesh: Situation analysis

Manzoor Hussain¹, Mohammad Abdullah Al Mamun²

Author's Affiliation:

1- President, Bangladesh Pediatric Association; President, Bangladesh Society for Pediatric Infectious Diseases, Former Head of Pediatric Medicine and Cardiology, Bangladesh Institute of Child Health and Ex-Director, Dhaka Shishu (Children) Hospital.
2- Associate Professor, Division of Neonatal Cardiology, Department of Pediatric Cardiology, Bangladesh Institute of Child Health and Dhaka Shishu (Children) Hospital.

Received on: 07-Jul-2020

Accepted for Publication: 20-Jul-2020

ABSTRACT

Comparing to adults, so far the direct effects of COVID-19 on child and adolescent appears not significant. COVID-19 outbreak adversely affect different services among the children of Bangladesh. These include disruption to their healthcare, nutrition, protection, education, overall mental wellbeing, vaccinations and preventive and curative services. Access to essential health delivery services specially routine immunization has already been hampered and threatens a significant increase in child mortality due to Vaccine Preventable Disease (VPD) in coming days. But, the indirect effect could be horrifying. If we reimagine and try to foresee the indirect impact, we would visualize the horrific impact on child health at the post Pandemic era. In the past, world had faced many challenges, but the human race could overcome those with inventions of vaccines, adopting appropriate policies and timely interventions. Here again, we must be positive but at the same time must formulate appropriate policies and take actions for timely implementation. Surely, one day the COVID-19 challenges will end, but we may have to face new challenges in post pandemic era.

INTRODUCTION

An outbreak of pneumonia of an unknown origin developed in Wuhan of Hubei Province, China during December, 2019.¹ By January 7, 2020, Chinese scientists confirmed that the outbreak was caused by a novel coronavirus, renamed as severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), and the disease is now termed coronavirus disease 2019 (COVID-19).^{2,4} On January 30, 2020, WHO declared a public health emergency of international concern (PHEIC) and pandemic on 11 March 2020.⁵

While the global coronavirus crisis worsens, a surprising feature of the disease appears that children might be immune from the worst of it. Studies suggest that COVID-19 is more likely to infect older adult men, particularly those with chronic comorbidities.⁶ There is only limited data detailing the effects of COVID-19 on the pediatric population. A review of 72,314 cases by the Chinese Center for Disease Control and Prevention showed that <1% of COVID-19 cases were in children younger than 10 years. Children of all ages were infected, with the median age being 7 years (range 1 day to 18 years) and 56% of the infected pediatric patients were male. Over 90% of the cases were mild or moderate in nature.⁷ In Bangladesh 3% of children <10 years were identified as COVID-19.⁸ Young children, especially infants, however, seemed to be more susceptible to severe disease than older children; 10% of patients under 1 year of age had severe or critical disease.⁹ In another study of 1391 children under 16 years of age assessed and tested for COVID-19, 171 (12.3%) were positive for SARS-CoV-2 infection. The median age of infected children was 6.7 years and 15.8% of patients had no symptoms or signs of pneumonia. Only 1.8% children required intensive care and mechanical ventilatory support, but all had pre-existing medical conditions.¹⁰

The mechanism by which children seem less susceptible to severe infection caused by SARS-CoV-2 has yet to be elucidated. It has been theorized that the ACE2 (the binding protein for SARS-CoV-2) in children is not as functional as it is in adults, and thus SARS-CoV-2 is less infectious.⁹

BANGLADESH SITUATION

As of 2 July 2020, according to the Institute of Epidemiology, Disease Control and Research (IEDCR), there are 153,277 confirmed COVID-19 cases in Bangladesh, including 1,926 deaths.⁸ In the

epidemiological week 25, COVID-19 confirmed cases increased by 14%, in comparison to previous week (24,786 and 21,751). The number of COVID-19 related deaths also increased by 3.2% (292 and 283 respectively).¹¹

Number of cases	Date
100	6 April
1,000	14 April
10,000	3 May
25,000	18 May
50,000	1 June
75,000	11 June
100,000	18 June
150,000	2 July

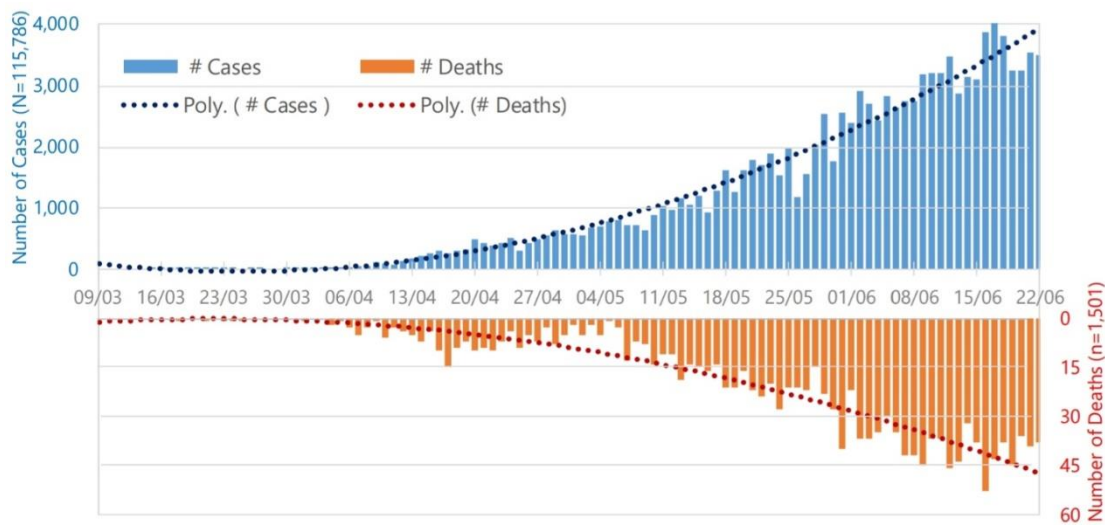


Fig.- Weekly distribution of confirmed COVID-19 cases and death (9 March to 22 June 2020)¹¹

As of 22 June 2020, the case doubling time in Bangladesh remain 8 days. Available data shows that how quickly the number of confirmed cases increased in Bangladesh and some countries in South-East Asia region: India, Indonesia, Thailand, and Sri Lanka.

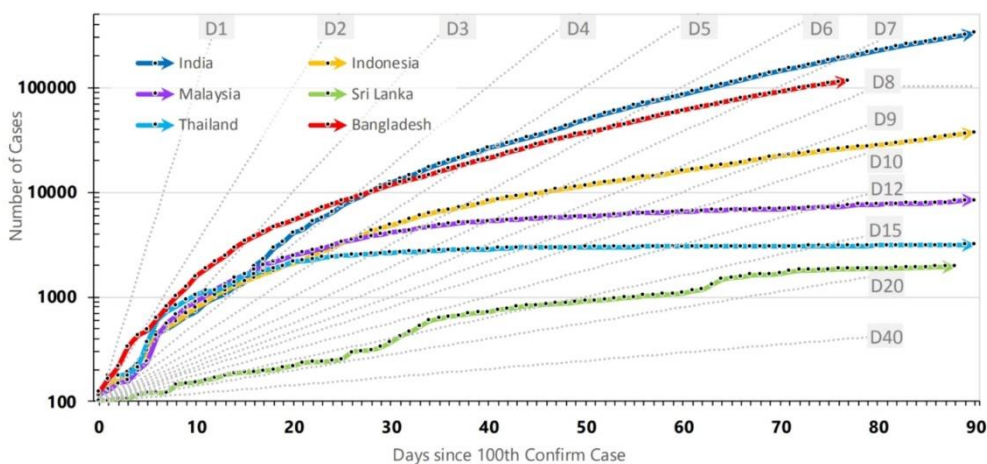


Fig.- Growth of confirmed COVID-19 cases in selected south east Asian countries starting from the day of 100th confirm case to 22 June 2020.¹¹

So far among the confirmed COVID-19 cases 3% belongs to age <10 years and 7% belongs to age 11-20 years.

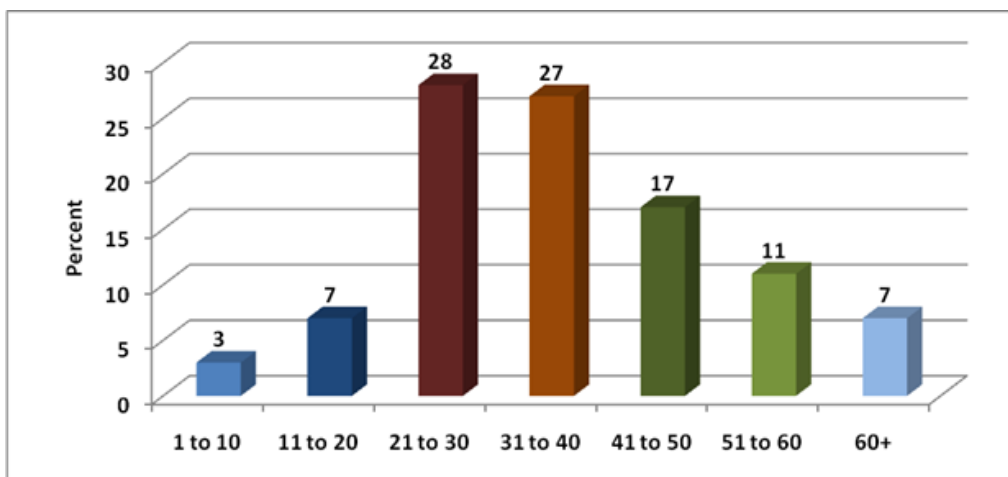


Fig.- Distribution of COVID-19 confirmed cases by age group.⁸

Among the confirmed COVID-19 cases 0.82% deaths belong to age <10 years and 1.49% deaths belong to age 11-20 years.

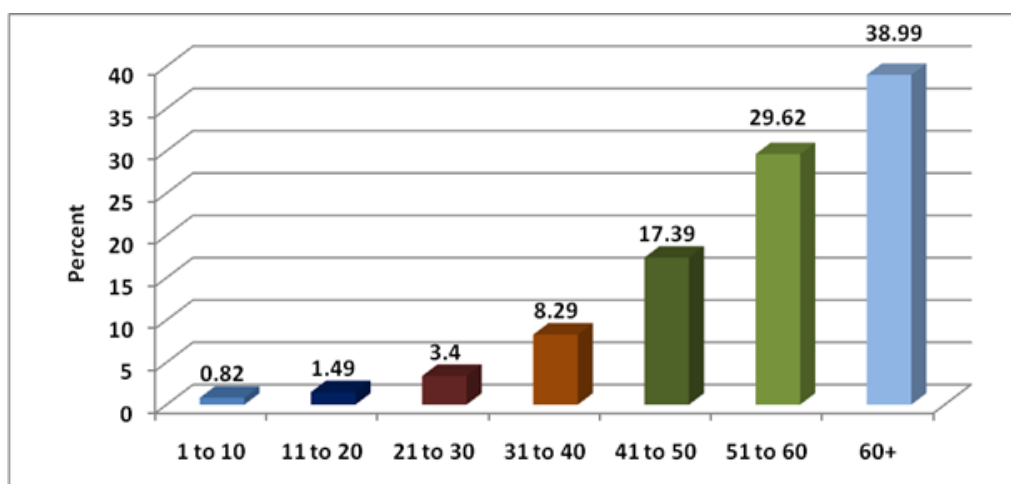


Fig.- Distribution of COVID-19 confirmed death cases by age group.⁸

First dedicated Child Corona Unit has been established in Dhaka Medical College Hospital on 10 May. They have treated 60 cases till 31 May 2020. Majority of the patients are of moderate severity (71%) and 25% were severe. Mortality was 13.3% among the admitted cases. Dhaka Shishu (Children) Hospital which is the largest pediatric hospital in Bangladesh also treating COVID-19 cases though it is not a dedicated corona hospital. Chittagong Medical College treated the highest number of COVID-19 pediatric cases so far. Many of the children with COVID-19 cases are managed in different dedicated COVID hospitals.

Table- Distribution of children with covid-19 admitted in three major hospitals till 31 May 2020 (N=220)

Dhaka Shishu (Children) Hospital (up to 31 May 2020) ¹²	
Total - 64	
Male-41(64%), female-23(36%)	
<1 month - 12(19%)	
1-12 months - 16(25%)	
1-5 years - 8(12%)	
5-10 years - 23(36%)	
>10 years - 5(8%)	
Total infected HCW 39 (Doctor-14, Nurse-12, Technician-3, Others-10)	

Dhaka Medical College ¹³
Total - 60
Asymptomatic - 2(3%)
Moderate - 43(71%)
Severe - 15(25%)
Died - 8(13.3%)
Discharged - 24(%)
DORB - 3(%)

Dhaka Shishu (Children) Hospital found many neonate with COVID-19. Most of the cases were found positive from general ward and cabin but only few were found from neonatal ward and NICU.

Table- Distribution of neonates with covid-19 admitted in Dhaka Shishu (Children) Hospital (N=15)¹⁴

Sl No	Age	Sex	Primary Diagnosis
1	2	Female	Occipital Encephalocele
2*	20		Term, AGA with Sepsis
3*	4	Female	Term with Perinatal Asphyxia with HIE-II with Pneumonia
4	22		Anorectal Malformation
5	23		Congenital Heart Disease
6	5		Neonatal Jaundice with Sepsis
7	20	Female	Pneumonia with Sepsis
8	1		Ruptured Lumbo-sacral Meningomyelocele
9	15		Posterior Urethral Valve
10	8		AKI
11	22		Perinatal Asphyxia with HIE-II with Sepsis
12*	6	Female	Term, IUGR with Perinatal Asphyxia with HIE-II with Sepsis
13	20		Pneumonia with Congenital Heart Disease
14	3		Anorectal Malformation with Sepsis
15*	8	Female	Term, AGA with Sepsis
*Directly admitted in NICU			

GUIDELINE FOR PEDIATRIC POPULATION

Pediatrics being an established speciality and it is already known that children are unique in their requirement of fluid and electrolytes, oxygen delivery as well as medicinal dose. For this Bangladesh Pediatric Association feels that a guideline is necessary for the paediatricians and others who are concern with children for proper management of COVID-19 patients. Experts from Bangladesh Paediatric Association (BPA) have tried to share the most updated information and these recommendations will be change periodically with upcoming evidence and experience.¹⁵

REDUCTION IN HEALTH SERVICES

Health services for children has decreased significantly due to the COVID-19 pandemic. COVID-19 outbreak will adversely affect the condition of children, particularly in the lives of most vulnerable children. This includes disruption to their healthcare, nutrition, protection, education and overall mental wellbeing including social interaction with friends, peers, family members and caregivers, family planning, antenatal and postnatal care, child delivery, vaccinations and preventive and curative services. The uptake of maternal and newborn health services has decreased, approximately by 19 percent. In addition, key maternal health services such as antenatal care visits and postnatal checkups in health facilities have decreased substantially, and deliveries in facilities have decreased by 21 percent for the period of January to March 2020 compared to October-December 2019.¹⁶

Critical health services for under-five children has decreased significantly due to the COVID-19 pandemic. The service utilization for children under 5 years of age in March 2020 was down 25 per cent compared to March 2019. A large number of children could die from preventable and treatable conditions if the pandemic leads to substantial reductions in health service coverage. Based on the worst of three scenarios in 118

low- and middle-income countries, the analysis estimates by researchers from the Johns Hopkins Bloomberg School of Public Health, published in *The Lancet Global Health Journal* warned that an additional 1.2 million under-five deaths could occur in just six months, due to reduction in routine health service coverage levels and an increase in child wasting. These potential child deaths will be in addition to the 2.5 million children who already die before their 5th birthday every six months, threatening to reverse nearly a decade of progress on ending preventable under-five mortality.¹⁶ Reduction of health services could cause death of over 28,000 children under the age of 5 years in the next 6 months as an indirect result of coronavirus pandemic.¹⁷ The greatest number of additional child deaths will be due to an increase in wasting prevalence among children, which includes the potential impact beyond the health system, and reduction in treatment of neonatal sepsis and pneumonia.

BREAST FEEDING SITUATION

WHO and UNICEF encourage women to continue to breastfeed during the COVID-19 pandemic, even if they have confirmed or suspected COVID-19. While researchers continue to test breast milk from mothers with confirmed or suspected COVID-19, current evidence indicate that it is unlikely that COVID-19 would be transmitted through breastfeeding or by giving breast milk that has been expressed by a mother who is confirmed or suspected to have COVID-19. But breastfeeding is decreased and Breast-milk Substitutes use is increased in Bangladesh.¹⁸

IMMUNIZATION

With lockdowns in place as a part of the novel coronavirus (COVID-19) response, routine immunizations have been severely disrupted, and parents are increasingly reluctant to take their children to health centers for routine jabs. Sporadic outbreaks of vaccine-preventable diseases, including measles and diphtheria, have already been seen in parts of Bangladesh, Pakistan and Nepal. National mass vaccination campaigns have been postponed. In Bangladesh, the postponed measles and rubella campaign targets 34 million children aged from 9 months to 9 years. Though routine immunization sessions continue, many outreach sessions have been suspended and the transportation of vaccines remains challenging. The Directorate General of Health Services in Bangladesh has issued guidelines to continue routine immunization during COVID-19 pandemic in line with UNICEF and WHO global and regional advisories. The routine immunization sessions are continuing both in fixed and outreach sites as an essential service that combats disease outbreaks.¹⁹

We must encourage that children receive their routine immunizations with preventive measures including physical distancing, handwashing, and face mask. We must make already panicked parents to understand that Vaccines are safe, effective and life-saving tools to control and prevent outbreaks of infectious diseases.

CHILDREN LIVING ON THE STREETS HAVE FEW SAFE PLACES TO GO DURING THE COVID-19 LOCKDOWNS.

Hundreds of thousands of children are living on the streets in Bangladesh, and the number is expected to continue growing. For many of them, the COVID-19 pandemic is proving particularly tough. Not only do these children often lack access to soap and clean water to help protect against coronavirus, but even basic guidance like “stay home” means little if you don’t have a home to go to.²⁰

VIOLENCE AGAINST CHILDREN

Many countries around the world have implemented lockdowns, stay-at-home, and physical distancing measures to contain the spread of COVID-19. The home, however, is not always a safe place for children, adolescents, women and older people who are experiencing or are at risk of abuse. Evidence shows that violence can increase during and in the aftermath of disease outbreaks. In many countries including Bangladesh affected by COVID-19, records from helplines, police forces and other service providers indicate an increase in reported cases of domestic violence, in particular child maltreatment. Although data on family violence during the COVID-19 pandemic are currently scarce, established evidence on violence against children.²¹

CONCLUSION

Pediatric patients are on the rise and unfortunately we noticed some casualties already. Comparing to adults, so far the direct effects of COVID19 on child and adolescent appears not significant. But, the indirect effect could be horrifying. COVID-19 outbreak adversely affect the condition of children. This includes disruption to their healthcare, nutrition, protection, education and overall mental wellbeing, vaccinations and preventive and curative services.

REFERENCES

- Huang C, Wang Y, Li X. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395:497-506.
- Parry J. China coronavirus: cases surge as official admits human to human transmission. *BMJ*. 2020;368:m236.
- Cheng VCC, Wong SC, To KKW, Ho PL, Yuen KY. Preparedness and proactive infection control measures against the emerging Wuhan coronavirus pneumonia in China. (Access Published January) *J Hosp Infect* 2020 Adv. 2020; 18.
- Zhu N, Zhang D, Wang W. A novel coronavirus from patients with pneumonia in China, 2019. (Access Published January) *N Engl J Med* Adv 2020; 24 <https://doi.org/10.1056/NEJMoa2001017>.
- World Health Organization. WHO Timeline - COVID-19. Available from: <https://www.who.int/news-room/detail/27.04.2020-who-timeline-covid-19>. Date accessed: May 31, 2020.
- Chen N, Zhou M, Dong X. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet* 2020;395:507-13.
- Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA* 2019 (2020):3-6.
- Bangladesh Covid-19 Update. Institute of Epidemiology, Disease Control and Research (IEDCR). Available from <https://www.iedcr.gov.bd/index.php/component/content/article/73-ncov-2019>. Accessed on 02.7.2020.
- Dong Y, Mo X, Hu Y, et al. Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China *Pediatrics*, 16 (e20200702) (2020 Mar).
- Lu X, Zhang L, Du H, et al. SARS-CoV-2 infection in children *N. Engl. J. Med.*, 18 (2020 Mar) [Internet]. Available from: <http://www.nejm.org/doi/10.1056/NEJMc2005073>.
- Bangladesh COVID-19 situation reports. World Health Organization. Situation Report 17. Available from <https://www.who.int/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situation-reports/who-covid-19-update-17-20200622>.
- Ahsan MR. COVID-19 among children and health care providers: Experience of Dhaka Shishu Hospital. Presented at Live Webinar on COVID-19 in children: Sharing experiences. Organized by Bangladesh Society for Pediatric Infectious Disease on 6 June, 2020.
- Anwar S. COVID-19 in children: Experience of Child Corona Unit of Dhaka Medical College. Presented at Live Webinar on COVID-19 in children: Sharing experiences. Organized by Bangladesh Society for Pediatric Infectious Disease on 6 June, 2020.
- Shirin M. Management of neonate during COVID-19 pandemic. Presented at Live Webinar on Management of neonate during COVID-19 pandemic. Organized by Bangladesh Neonatal Forum on 20 June, 2020.
- Management SOP for Pediatric COVID-19. Bangladesh Paediatric Association (BPA). Available from <https://www.bpabd.org/>.
- UNICEF. As covid-19 devastates already fragile health system, over 6000 additional children under 5 could die a day, without urgent action. Available from <https://www.unicef.org/bangladesh/en/press-releases/covid-19-devastates-already-fragile-health-systems>. Accessed on 3.07.2020.
- COVID-19: Over 28,000 children could die in 6 months without urgent action. <https://unb.com.bd/category/Bangladesh/covid-19-over-28000-children-could-die-in-6-months-without-urgent-action/51543>. Accessed on 28.06.2020.
- Countries failing to stop harmful marketing of breast-milk substitutes, warn WHO and UNICEF <https://www.unicef.org/bangladesh/en/press-releases/countries-failing-stop-harmful-marketing-breast-milk-substitutes-warn-who-and-unicef>. Accessed on 28.06.2020.
- Disruption of child vaccination in South Asia poses an urgent threat to children's health - UNICEF. Available from <https://www.unicef.org/bangladesh/en/press-releases/disruption-child-vaccination-south-asia-poses-urgent-threat-childrens-health-unicef>. Accessed on 28.06.2020.

20. Choedhury IA. For many in Bangladesh, staying home isn't an option. <https://www.unicef.org/bangladesh/en/stories/many-bangladesh-staying-home-isnt-option>. Accessed on 28.06.2020.
21. Addressing violence against children, women and older people during the covid-19 pandemic: Key actions. World Health Organization. Available from https://www.who.int/publications/i/item/WHO-2019-nCoV-Violence_actions-2020.1. Accessed on 29.6.2020.