Leading Article

Impact of COVID-19 on Child Life & Health in Bangladesh

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Introduction

Since its inception, SARS-CoV-2 (COVID-19) has over time evolved into a global health crisis. Pediatric COVID-19 cases have since been reported all over the world. Children of all ages have been infected with the virus, with over 90% of the cases being mild or moderate in nature.[1] Although severe instances of COVID-19 in children, including fatal cases have been reported, most children appear to have asymptomatic, mild or moderate disease and recover within one to two weeks of disease onset.[2] The present context in Bangladesh indicates a rise in paediatric patients including some casualties.[3,4] The age-distribution data on confirmed cases COVID-19 in Bangladesh also indicates that the present local situation in Bangladesh seems to be different in comparison to the earlier scenario. However, as the data is evolving, there are still various factors which require further research.

Hospital Experiences of COVID-19 in children

Considering the ongoing global pandemic and health emergency situation, most countries have faced adverse situations in handling COVID-19 cases. It has been no different in Bangladesh, especially due to a high population density. As per the Institute of Epidemiology Disease Control & Research (IEDCR) Bangladesh, findings from epidemiological studies on COVID-19 cases suggest that the confirmed case rates were 3% in 1-10 year and 7% in 11-20 year age group with fatality 0.8% and 1.5% respectively.[5]

In a multicenter study conducted from May 2020 to November 2020 at Dhaka Shishu (Children) Hospital, Dhaka Medical College Hospital, Mugda Medical College Hospital and Kurmitola General Hospital. Total 553 paediatric COVID-19 cases were included and it was found that children of all ages have been affected (shown in Table-I). Regarding clinical characteristics, majority of the children were admitted with fever (94.92%) & cough (79.69%). Overall mortality was 4.52%.[3] Iman K et al.[6] conducted a study at Dr. MR Khan Shishu Hospital and Institute of Child Health, Dhaka & Ghosh UK et al.[7] also conducted a cross-sectional study in same hospital from April 2020 to August 2020 on COVID-19 cases (shown in Table-I). Fever, cough, diarrhea & anorexia was found as common symptoms[6,7] Rahman M et al.[9] found a good number of cases of COVID-19 infection in neonate. Out of 1714 admitted neonates in Dhaka Shishu (Children) Hospital, 32(2%) cases were found COVID-19 infection. Male were predominant (67%) and majority cases (88%) were term. Among the neonates with COVID-19, 4(12%) cases died.

Afroz S et al.[10] conducted a separate study at Dhaka Shishu (Children) Hospital to find out the clinical presentation, course and outcome of multisystem inflammatory syndrome in children (MIS-C) during Covid-19 pandemic. Age ranged from 17 days to 13 years, 56% were male. The median duration of hospitalization was 11 days and ICU stay was 5 days. Kawasaki's disease-like features were documented in 50% patients and 4 of them had elevated level of procalcitonin and troponin-I. Markedly elevated CRP, Ferritin and D dimer were present in all patients. All patients with cardiac involvement had left ventricular dysfunction and ejection fraction was as low as 38.5%. Out of 12 patients 2(16.66%) died, the contributing cause of death included complications like hypotension, shock, myocarditis, coagulopathy and AKI. Several authors also reported MISC in Bangladesh.[11-13] Considering the data, it appears to us, that the susceptibility of children in Bangladesh to the COVID-19 virus compared to other countries is more and the mortality is also significantly more. Jamal CY et al.[14] commented regarding higher paediatric fatalities relating to COVID-19 and concluded that malnutrition and high prevalence of vitamin D deficiency among Bangladeshi children may be contributing factors of higher infection rates and mortality.

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Table-I

Common presentations of COVID-19 in different study[3,6,7] among Bangladeshi children (Data were shown in percentile)

	Hussain M et al.[3] (N=553)	Iman K et al.[6] (N=159)	Ghosh UK et al.[7] (N=71)
Age	*%*	*%*	*%*
<1 year	30.74	25.8	30.97
1-5 year	25.68	42.1	35.21
6-10 year	21.34	20.1	21.13
>10 year	22.24	12	12.68
Clinical Symptoms			
Fever	94.92	97.5	80.28
Cough	79.69	80.5	45.07
Running nose	50.78	-	29.58
Respiratory distress	59.77	-	15.50
Diarrhoea	17.19	28.3	15.50
Vomiting	14.45	17	-
Abdominal pain	9.77	-	4.23
Anorexia	-	30.8	28.2
Weakness	-	30.2	14.1
Myalgia	52.73	-	-
Headache	40.63	-	-
Convulsion	4.69	-	25.35
Conjunctivitis	0.78	-	1.4
Rash	1.56	-	4.23
Lab. Investigation			
Leucocytosis	-	5	-
Leucopenia	41.02	3	-
Lymphopenia	41.79	-	-
Thrombocytosis	-	Negligible	-
ESR	-	High	-
CRP	28.91	High	-
X-Ray Findings			
Opacities on lung (Local, patchy and bilateral)	78.92	62.9	-
Normal X-ray	8.2	37.1	-

Situation of child health services during COVID-19 pandemic

As an impact of the COVID-19 routine healthcare and immunization, nutrition, protection, education and overall mental well being including social interaction with friends, peers, family members and caregivers, family planning, antenatal and postnatal care, child delivery, preventive and curative services were disrupted. Critical health care services for under-five children have also decreased significantly. In 118 low and middle-income countries, 1.2 million under-five deaths may occur in just six months, due to reduction in routine health service coverage levels and an increase in child wasting due to corona virus pandemic.[15] Reduction of health services could cause death of over 28,000 children under the age of 5 years in 6 months as an indirect result of coronavirus pandemic.[16] As a result of disruptions in all essential health care services, child mortality in Bangladesh could foresee ably increase by 37 percent and maternal mortality by 19 percent over the next year.[17] This would have a detrimental impact in Bangladesh's efforts to achieve the estimated related SDG goals. However, the sharp decrease of mass immunization in Bangladesh has risen significantly since January 2021. According to the Directorate General of Health Services (DGHS) Management Information System (MIS), DHIS-2, by the end of January 2021, 34,061,291 (34 million) children from ages 9 month to <10 years were given the MR vaccine, achieving >95% coverage of the target children. Following which, all other child immunization coverage has also risen significantly up till present date. This has been made possible by the diligent efforts of the Ministry of Health & Family Welfare (MOH&FW) of the Government of Bangladesh. MOH&FW prepared to conduct the vaccination campaign with safe conditions, and without causing any undue harm to the health workers and the community as well.

Impact of the COVID-19 pandemic on breast feeding

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 has decreased and Breast-milk substitutes use have increased in Bangladesh during this pandemic.[18]

Impact of the COVID-19 pandemic on routine immunization

Routine immunizations have been severely disrupted in Bangladesh due to the pandemic, and parents are increasingly reluctant to take their children to health centers. Though routine immunization sessions continue, many outreach sessions have been

suspended and the transportation of vaccines was challenging during onset of the pandemic. National mass vaccination campaigns had since also been postponed. Measles and Rubella (MR) immunization campaign postponement has left 34 million children aged from 9 months to 9 years without vaccination.[19] According to service utilization data from the national Management Information System (MIS), the number of immunization sessions dropped by 18% in April 2020 and by 22% in May 2020. Furthermore routine immunization coverage for Penta third dose and Measles and Rubella (MR) first dose of vaccine was almost 50% lower in April 2020 as compared to the same period in 2019.[20] Country wide over 380,000 children missed their first dose of MR vaccine and over 360,000 children missed the 3rd dose of pentavalent vaccine between January and May 2020.[21] The surveillance of measles dropped to an alarming level in April and May, 2020, putting Bangladesh at risk of outbreaks of extremely contagious diseases like measles.[22]

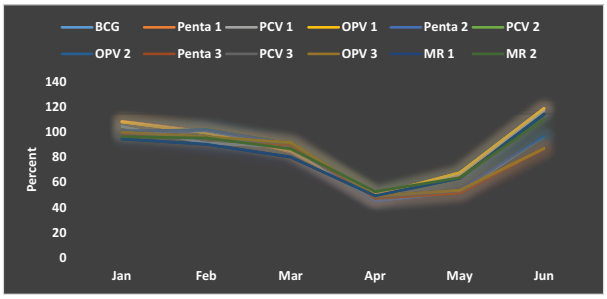

Fig.-1 *Vaccination coverage in Bangladesh from January to June, 2020*[22]

Sharp decline from April to May 2020 (Fig.-1) due to COVID-19 implications are getting back on track due to extra efforts initiated by the Government of Bangladesh with the support of WHO.[22] Reduction in routine immunization coverage putting millions of children in rich and poor countries alike at risk of diseases like diphtheria, measles and polio.[23] We must encourage parents to ensure that children receive their routine immunizations in observance of the required COVID-19 health and safety guidelines such physical distancing, hand washing, and wearing of face mask in public, etc.

Impact of the COVID-19 pandemic on education

The COVID-19 pandemic has affected academic and educational systems worldwide, leading to the near-total closures of schools, colleges and universities. With close to 40 million children enrolled in school in the country, Bangladesh is among the countries most affected by a complete shutdown. Regardless of its impact on household poverty, this pandemic will directly impact learning outcomes by reducing time spent in learning activities, in and out of school. While in-school disruption is universal, out-of-school learning deprivation will vary depending on socio-economic status of the household, access to technology, and parental capabilities.[24] School closures in response to the pandemic have shed light on various social and economic issues, including student debt, digital learning, food insecurity, homelessness, access to childcare, health services, housing, internet and disability services. The impact was more severe for disadvantaged children and their families, causing interrupted learning, compromised nutrition, child care problems, and consequent economic cost to families who could not work.[25] To help students deal with the adverse impacts of school closures, the Government of Bangladesh introduced remote learning through television, mobile phones, radio, and the Internet. But this might lead to extra pressure on students from low-income families who do not own a medium to connect to those programs. For the correct implementation of this task, students and teachers must be encouraged and viewed as a challenge to carry out appropriately.[26]

Impact of COVID-19 and lockdown on mental health of children and adolescents

The ongoing COVID-19 wide spread has resulted with an increased impact on mental wellbeing, creating stress and psycho-emotional chaotic circumstances. Reported mental health issues created by the global pandemic includes uneasiness, discouragement, stretch, sleep disorder, fear, social anxiety, social isolation as a result of prolonged lockdowns and lack of social human interaction. An online cross-sectional study was conducted among 384 parents having at least one child aged between 5-15 years where 43% of child had sub-threshold mental disturbances, 30.5% had mild, 19.3% suffered moderately, and 7.2% of child suffered from severe disturbances. This demonstrates that large proportions of children are suffering from mental health disturbances in Bangladesh during the period of lockdown.[27] Another online based survey also found severe depressive side effects and agreeable to extreme anxiety symptoms

among students in Bangladesh.[28] Pandemic situation also increases the risk of addiction to social media, video games and pornography.

Situation of children living on the streets during the lockdowns

A huge number of children are living on the streets in Bangladesh having lack of 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.[29]

Violence against children

Domestic abuse also plays a major role in Bangladesh where the home is often not a safe place for children, adolescents, women and older people, being in the risk of abuse. Evidence shows that violence can increase during and in the aftermath of the pandemic. In many countries including Bangladesh affected by COVID-19, data from national help lines, police forces and other service providers indicate an increase in reported cases of domestic violence, in particular child maltreatment.[30]

Other health related issues in children

The present situation amid COVID-19 has led the children and young people into a sedentary lifestyle, idleness, and physical inactivity which may increase the incidence of obesity, and other chronic diseases such as diabetes mellitus and cardiovascular diseases. Malnutrition could exacerbate the effects of COVID-19 in children and make the current crisis an inter-generational one.

Conclusion

In Bangladesh, a significant number of children of all ages were identified with COVID-19 and many of them were hospitalized with some reported casualties. Essential health care services should be preserved to prevent avoidable losses of child lives and their physical and mental health during the COVID-19 pandemic. It is important to address the adverse effects of the pandemic on mental health and cognitive development of children as it may lead to both short- and long-term effects on their physical and mental health such as obesity and diabetes, depression and mood swings, psychological trauma, irregular sleep disorders etc. impacting behavioral patterns in children, declining academic performance, inattentiveness, poor academic outcomes sociability problems due to prolonged isolation and an increased need for paediatric healthcare and psychotherapy. Due to massive increase in unemployment resulting from the pandemic, the impacts of child poverty may extend to massive proportions such as increased malnutrition, dropping out of school, child labour, engagement in heinous crimes and forced under-aged marriage for adolescent girls.

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