

**IMPACT OF COVID 19 ON CHILDREN: A STUDY FROM A TERTIARY LEVEL
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ABSTRACT

Background: COVID-19 is an infectious disease caused by a newly discovered coronavirus. The best way to prevent the transmission of COVID 19 is to maintain social distancing. Bangladesh government has declared nationwide school closure to prevent spread. The present study was carried out to analyze the impact of COVID 19 on the lifestyle of children during this pandemic situation. **Methodology:** It was a cross sectional study conducted in the community among 6 to 18 years old children from May to November 2020. Data were collected using a structured predesigned and pre tested questionnaire by face to face interview. **Result:** The study population was 200 school going children from rural (52%), urban (36.5%) and semi urban (11.5%) areas. It is found that, the pandemic has changed the habit of waking up from bed, curricular and extra-curricular activities and increased gadget and Television dependency. Only 33.5% of children have adequate facility of distance learning. Forty three children (21.5%) has developed psychosocial abnormalities during this pandemic. **Conclusion:** A child-focused response plan to COVID-19 should be taken, especially, working with schools and support them during the lockdown period.

KEYWORDS: COVID 19, impact, online class, domestic violence, psychological impact.**INTRODUCTION**

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people with COVID-19 experience mild to moderate respiratory illness and recover, but, some people with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, immunodeficiency and cancer are more likely to develop serious illness.^[1]

Although the molecular mechanism of COVID-19 transmission pathway is still not resolved, the principle of transmission is by droplet scattering where a sick person spreads this microbe by coughing or sneezing. So, environmental factors play important role in the transmission of this virus.^[2] The best way to prevent and slow down transmission is to maintain respiratory etiquette and personal protection such as wearing mask, hand washing and social distancing.^[1]

Approximately 214 countries and regions have reported confirmed COVID-19 cases worldwide.^[3] Countries have taken strict restrictions such as closure of schools, working from home, quarantine for areas with high number of cases, and lockdown to slow down the COVID 19 outbreak.^[2]

Researchers have warned that, children, who have a relatively lower risk of COVID-19 infection, are being harmed by precautions involved with lockdowns, especially by ongoing school closure. According to UNESCO, the education of nearly 1.6 billion students in 190 countries have so far been affected – which is about 90% of the world's school-age children. Besides, stresses of living in quarantine may have some serious consequences on cognitive, emotional and social development and even increased risk of mental illness.^[4]

Bangladesh government has declared nationwide school closure since March 2020 to prevent spread.^[5] So, it can be predicted that, schools are not going to be reopened soon, nor lifestyle is going to be as before. Considering these issues, the present study has been carried out with the objective to analyze the impact of COVID 19 on the lifestyle of children during this pandemic situation.

MATERIALS AND METHOD

It was a cross sectional study conducted in the community among 6 to 18 years old children from May to November 2020. Data were collected using a structured predesigned and pre tested questionnaire containing necessary variables. Children from rural, semi urban and urban area were selected by purposive

sampling method. Data from rural children were collected from a village in Gazipur district. For urban children, data were collected from neighborhood, and also from children visiting the hospital outpatient with minor illness. Semi urban population were included from hospital outpatient department visiting with minor illness.

Socioeconomic strata were demarcated as five distinct classes as per the classification criteria of Asian Development bank. To estimate the size of the middle class across the developing Asian countries, a range of \$2–\$20 per person per day income has been set to define the middle class population and subdivided further. The lower-middle class are those who consumes \$2–\$4 per person per day, the middle middle class consumes \$4–\$10 and the upper-middle class consumes \$10–\$20 per day.^[6] Population above these income levels were considered as higher class, and below these levels were lower class.

Ethical clearance was taken from the appropriate body. After taking informed written consent, face to face interview of the child was taken in presence of one or both parents/guardians. Both children and parents/guardians contributed to fill up the questionnaire. Almost all the questions were close ended except one. The question 'activities done during previous school time' was encouraged to explain in lines. After compilation, data were analyzed to get inference.

RESULT

In this cross sectional observational study, the study population was 200 school going children from the community. They had a mean age of 12.36 years and male:female ratio was 1.14:1. Most of the children were from rural area (52%), followed by urban (36.5%) and semi urban (11.5%) areas. Majority of the study population were from middle class family (Table 1).

In Table 2, impact of COVID 19 pandemic on the lifestyle of children were compared with the lifestyle before. Almost 76.5% children are waking up late after school closure. Even among the early risers, the good habit persisted only in 1 child. Those who used to get up timely, that is, in the optimal time in respect of schooling and lifestyle, had started getting up late. And the pandemic has changed the habit of waking up from bed.

Among the 200 children, 23.5% had been practicing some extra-curricular including cultural and fine arts activities before lockdown, but only 14.5% could retain the practice. The decline was statistically significant. Outdoor games activity has significantly reduced during COVID pandemic (p value 0.00002) and there was significant increase in the indoor games activities (p value <0.00001). There is significant increase in gadget, online and television dependency (Table 2).

Table 3 has emphasized the time passing activities being done while a child was supposed to be present at school. It is found that, children are engaged in different activities like busy on screen, playing games, studying, reading story books and creative writing, helping parents in household and outdoor activities. As high as 63.5% children are continuing studying academic books during school time. Seventy eight percent of children are utilizing the time by reading story books, writing and memorizing the holy books. About 12.5% of girls are helping their mother in household activities, and 4% boys are helping their fathers in their profession at work. Despite the situation of lockdown and social distancing, 27.5% children are engaging themselves in some outdoor games during their school time. Children are busy in different forms of screen time such as cell phone and computer games, watching movies and drama, watching programs on television etc.

Almost all the children in this research are school going, and all are experiencing school closure during this pandemic. Only 33.5% of children have the facility of distance learning in the form of online classes. Only 14.9% of students and 16.4% of parents are satisfied upon the modality, timing and execution of online classes. Some schools (27% of study population) are taking terminal and semester examinations online. Only 11.1% of students and 9.2% of parents are satisfied with online examination (Table 4). Forty three children (21.5%) has developed psychosocial abnormalities. Most of the children in this panel are agitated (7.5%), developed excessive anger (6%), anxiety (4.5%) and also feeling of tiredness, feeling of sickness, introverted behavior and aggression. One child experienced child abuse by parents during lockdown in the form of forcing her to do household activities (Table 5).

DISCUSSION

The COVID-19 pandemic has presented an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption is devastating. Children are not the primary victim of this pandemic, but their lives are being changed in profound ways. All children, of all ages, and in all countries, are being affected, in particular by the socio-economic impacts and, in some cases, by mitigation measures. The situation is aggravated by children's lack of schooling.

In this article, impact of COVID 19 pandemic was tried to be sketched on the lifestyle of Bangladeshi children. For that, 200 Bangladeshi children from the community had been selected randomly from rural, semi urban and urban area, as lifestyle, indoor and outdoor activities and schooling differs among communities. In this study, most of the children were from rural area, followed by urban and semi-urban area as a reflection of the organogram of the country. Another important point was the socio-economic class which also plays a vital role on the standard of living.^[7] Based on this, the study population

was further stratified into five socioeconomic strata. Most of the children were from middle class (49.5%) background (Table 1).

Table 1: Socio-Demographic Profile of the Study Children (n=200).

Variable	n	%
Age (Mean±SD)	12.36±3.44 years	
Sex (Male:female)	1.14:1	
Residence		
Rural	104	52%
Semi-urban	23	11.5%
Urban	73	36.5%
Socio-economic background		
Lower	10	5%
Lower middle	47	23.5%
Middle	99	49.5%
Upper middle	43	21.5%
Higher	1	0.5%
School going		
Yes	200	100%
No	0	00%

Over the last decade, Bangladesh has made notable progress in expanding access to education. In a country of over 18 million primary school students, Bangladesh has achieved near universal net primary enrollment, with approximately 98 percent of children of primary school age enrolling in school.^[8] As a reflection to this, all the 200 children were school going before lockdown.

There remains a daily routine for every individual and family. When children can do their parts of the routine with less help or supervision, it helps them to become more independent. Daily routines also help to set our biological clocks too. Routines help in doing the daily

tasks more efficiently and free up time for other things. During COVID 19 pandemic, most of the children lost their daily routine. It has been observed that, those who used to get up early in the morning, are now late risers (Table 2). A person who habitually gets out of bed earlier than is usual is called an early riser. Here, during data collection, 6 am was taken as the cut of point. Those who woke up before 6 were considered as early risers. It is literally a very good habit which provides positive outlook, more energy, helps in rebooting the body systems. Early rising also makes people to become more organized and productive as they get more time in a day to work with.

Table 2: Impact of COVID 19 on Daily Life of Children (n=200)

Variables	Previously n(%)	During COVID Pandemic n (%)	p Value*
Waking up from bed			
Early	6 (3%)	1(0.5%)	<0.00001
Timely	103(51.5%)	46(23%)	
Late	91 (45.5%)	153(76.5%)	
Extra curricular activity			
Yes	47(23.5%)	29(14.5%)	0.02
No	153(76.5)	171(85.5%)	
Outdoor games			
Yes	123(61.5%)	81(40.5%)	0.00002
No	77(38.5%)	119(59.5%)	
Indoor games			
Yes	152(76%)	198(99%)	<0.00001
No	48(24%)	2(1%)	
Gadget and Television dependency			
Yes	86(43%)	162(81%)	<0.00001
No	114(57%)	38(19%)	

*Chi square test

In this article, the word waking up 'timely' has been used. It means waking up from bed in a suitable time or the best possible moment, so that all the tasks of the day can be done efficiently. Almost 51.5% of the study

children were in this group before the pandemic, but after that only 23% are maintaining the habit. Before lockdown, 45.5% children used to get up late. They had school timing after 10 O'clock in the morning. Number

of late risers have increased (76.5%) after lockdown and the changes are statistically significant (Table 2). The common reasons for getting up late was late bedtime, more screen time at night, school vacation, no study or exam pressure and feeling of nothing to do by day. The rate of extracurricular activity practice and outdoor games activity declined significantly, whereas indoor games participation increased. Children are spending idle times by playing Ludu, Uno, Carom, Chess, Monopoly or playing with toys, dolls or with sibs at home.

Alarmingly, gadget, online and television dependency increased significantly during the pandemic. To spend the unlimited vacation, children have become gadget dependent, busy with social media, personal chat groups, online movies or web series and many more besides their online classes. A cross-sectional, self-reported survey was conducted among 2050 Chinese children and adolescents aged 6 to 18 years. The findings provide substantial evidence of excessive internet use among Chinese children and adolescents during this outbreak, including frequency and duration of recreational internet use. Age, gender, depression, and stress were the potential key factors affecting internet addiction. Extended family and professional support was suggested for vulnerable individuals during these unprecedented times.^[9]

As the pandemic surged globally, schools were closed in most countries based on evidence from influenza outbreaks to limit student contact, reduce the burden on the health care system and protect vulnerable populations. Schools support the learning, health, and development of children. Prolonged school absences have detrimental effects on both children and families. With the loss of supportive routines and structures, healthy life styles have declined significantly.^[10] In Table 3, the question how children spend the previous school time at home was addressed. The observation was, children are busy with multidisciplinary tasks. Hopefully, 63.5% children continue studies at home during school time irrespective of online class and examination facilities. Some were busy with reading story books, creative writing and a beautiful attempt of memorizing the holy books. Fifty eight percent children were busy on screen during school time with cell phone, computer games, television, online competition, learning code and graphic designs online and running web based organization and pages for business purpose. Girls (12.5%) helped their mother in household activities and 4% of boys are helping fathers in the outdoor activities like fishing and running shop. Some children were also interested in other activities like games, arts, crafts making, exercise and listening music. Few children were busy in outdoor games and hanging out while supposed to be in school (Table 3).

Table 3: Activities During Previous School Time (n=200).

Variable	n	%
Reading and writing (78.5%)		
Studying academic books	127	63.5%
Reading story books	21	10.5%
Creative writing	7	3.5%
Studying religious books	2	1%
Screen time (58%)		
Cell phone and computer game	98	49%
Movie and drama	9	4.5%
Watching Television	4	2%
Online competition	1	0.5%
Code and graphics design	2	1%
Running online organization	2	1%
Sports and games (32%)		
Outdoor games	55	27.5%
Indoor games	9	4.5%
Helping parents (16.5%)		
Household work	25	12.5%
Outdoor activities	8	4%
Others		
Rest, sleep and idle time	29	14.5%
Roaming and hanging out	10	5%
Arts and crafts	3	1.5%
Exercise	2	1%
Listening Music	1	0.5%

The Covid-19 pandemic is having impact on almost every part of the education sector, from primary schools to the university level. The prolonged countrywide

shutdown measures has left students facing severe consequences. As a damage control policy, online education was introduced in emergency response.

UNICEF is already working with the government and using television and radio programs to provide remote learning in the unprivileged areas.^[11]

Online education provides a healthy routine in a comfortable environment, but everyone in Bangladesh can not afford it. As high as 40 million students are not being able to continue regular academic curriculums across Bangladesh. To take part in online education, students need at least a smartphone and a stable internet connection.^[12] The latest 2020 data of HIES (Household Income and Expenditure Survey) showed that around 12.70 percent of the poor families do not have a single mobile phone.^[13] Due to the prolonged shutdowns, many families are facing a severe financial crisis and unable to support their children's education. A survey conducted by BioTED, a novel training and research initiative, revealed that 55 percent students do not have proper internet connections.^[14] In order to attend classes regularly, a student needs to spend at least 300 MB to 1 GB data per day. This being a costly procedure, many students are deprived of learning opportunities.

Moreover, many remote areas lack proper electricity supply and internet infrastructure which has a detrimental effect on the students. In order to conduct online lectures, teachers must have practical knowledge of online teaching methods and resources. However, most of the primary school teachers of Bangladesh are struggling with this issue. In the rural areas, most of the teachers do not even own a smart phone. Therefore, not just the students, the teachers are also in a precarious situation.^[10]

In the present study, out of 200 children, distance learning was going on in 33.5% of cases through zoom meeting, facebook live and google classroom and the majority (66.5%) were deprived from online education. But student and parental satisfaction on the distance learning method was not satisfactory (14.9% and 16.4% respectively). Out of 33.5% children experiencing online classes, 27% had online examinations. However, student and parental satisfaction regarding online examination were also very low (Table 4).

Table 4: Schooling During COVID 19 Pandemic.

Variable	n	%
Online class		
Going on	67	33.5%
Not going on	133	66.5%
Satisfaction on online class (n=67)		
Student satisfaction		
Yes	10	14.9%
No	57	85.1%
Parental satisfaction		
Yes	11	16.4%
No	56	83.6%
Online examination		
Going on	54	27%
Not going on	146	73%
Satisfaction on online examination(n=54)		
Student satisfaction		
Yes	6	11.1%
No	48	88.9%
Parental satisfaction		
Yes	5	9.2%
No	49	90.8%

As a result of the emergence of coronavirus disease 2019 outbreak, a situation of socio-economic crisis and profound psychological distress rapidly occurred worldwide. Various psychological problems and important consequences in terms of mental health including stress, anxiety, depression, frustration, uncertainty during COVID-19 outbreak emerged progressively.^[15] During the lockdowns in all the 193 UN member countries, including Bangladesh, the United Nations Population Fund (UNFPA) predicted a 20 percent increase in domestic violence during the pandemic.^[16] In the case of domestic violence, it is

mostly perpetrated by family members who abuse, attack, humiliate, and torture women and children. A recent survey conducted by a local NGO working with human rights, The Manusher Jonno Foundation (MJF), in 27 out of 64 districts in Bangladesh found that 4,249 women, and 456 children were subjected to domestic violence in April 2020. Of these victims, 1,672 women and 424 children were facing violence for the first time in their lives. The women, who faced the violence for the first time, blamed the lockdown for this domestic violence.^[17]

The scarcity of social activities and financial crisis are increasing rifts within families. Men are frustrated about losing their jobs because of the COVID-19 lockdown. Some might have expressed their frustration by humiliating their wives and children. Domestic violence in Bangladesh includes child marriage, physical torture, verbal abuse, harassment, and humiliation.^[18] In this study only one child experienced child abuse in the form of compelling her to do most of the household works all day long. But 21.5% children developed some psychological abnormalities those were mentally healthy before. Agitation, excessive anger and anxiety were the common features (Table 5).

Table 5: Psychosocial Impact of COVID 19.

Variable	n	%
Child abuse	1	0.5
Psychosocial abnormality	43	21.5
Irritation	15	7.5%
Excessive Anger	12	6%
Anxiety	9	4.5%
Always feel tired	3	1.5%
Feeling of Sickness	2	1%
Introverted behavior	1	0.5%
Aggression	1	0.5%

The most vulnerable children – including refugees, migrants, and children who are internally displaced, living without parental care, on the street and in urban slums, with disabilities, and living in conflict-affected areas could not be included in the study. Further research in a large scale including those children may provide a scaffold to get the actual picture.

CONCLUSION

The study has made an attempt to explore the impact of the COVID-19 pandemic on the lives of the children in Bangladesh. Keeping the findings from the study in mind, a child-focused response plan to COVID-19 should be taken, especially, working with schools and support them to reach each and every student during the lockdown period. Supporting children from marginalized families with online connectivity and strengthening campaign against violence and psychological issues are also very essential and a time demanding issue.

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