



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

# IJRSET

International Journal of Innovative Research in  
**SCIENCE | ENGINEERING | TECHNOLOGY**

# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 10, Issue 9, September 2021

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

Impact Factor: 7.569

9940 572 462

6381 907 438

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# Study of the Impact of Covid-19 on the Physical and Social Development of Children of Late Childhood with Reference to Jabalpur District

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**ABSTRACT:** A study in the Jabalpur district found that children younger than five years with mild to moderate COVID-19 have a high amount of SARS-CoV-2 viral RNA in their nasopharynx compared with older children and adults. The data indicates that girls were already more vulnerable compared to boys even before COVID-19. The evidence shows that during previous periods of disease outbreaks like Zika, SARS and Ebola, adolescent girls are more vulnerable due to lost earnings and education, increased vulnerability to gender-based violence, and unintended pregnancy. Children and adolescents are more vulnerable to mental health issues because they were unable to comprehend the entirety of a situation nor fully communicate their feelings to adults. This vulnerability was heightened as the pandemic disrupted their normal lives, deprived them of schooling and, concomitantly, opportunities for socialisation and physical activities.

The tools used to mitigate the threat of a pandemic such as COVID-19 may very well threaten child growth and development. These tools — such as social restrictions, shutdowns, and school closures — contribute to stress in parents and children and can become risk factors that threaten child growth and development and may compromise the Sustainable Development Goals. The studies reviewed suggest that epidemics can lead to high levels of stress in parents and children, which begin with concerns about children becoming infected. These studies describe several potential mental and emotional consequences of epidemics such as COVID-19, H1N1, AIDS, and Ebola: severe anxiety or depression among parents and acute stress disorder, post-traumatic stress, anxiety disorders, and depression among children. These data can be related to adverse childhood experiences and elevated risk of toxic stress.

**KEYWORDS:** social, childhood, mental, physical, adolescent, Covid-19, outbreaks

## I. INTRODUCTION

The COVID-19 pandemic has imposed a number of changes on daily routines in Jabalpur, India needed to preserve individual health. Meanwhile, it is important to note that children around the world continue to grow and develop.[2] In this scenario, one priority challenge is identifying and discussing pandemic-related factors that can negatively affect children's growth and development and impair each child's full potential, in order to develop prevention strategies that enable a healthier and more productive population over both the short and long term. Under the appropriate care and support of adults who provide children with constant feelings of security and affection, the child's body reorganizes itself biochemically and quickly returns to levels of physiological functioning without further damage. However, when this support is non-existent or inadequate, a failure of the body's functions to return to basal level primarily impacts the cardiovascular and neurological systems, with consequent irreversible loss of connections in the infant brain, due to toxic stress.[1]

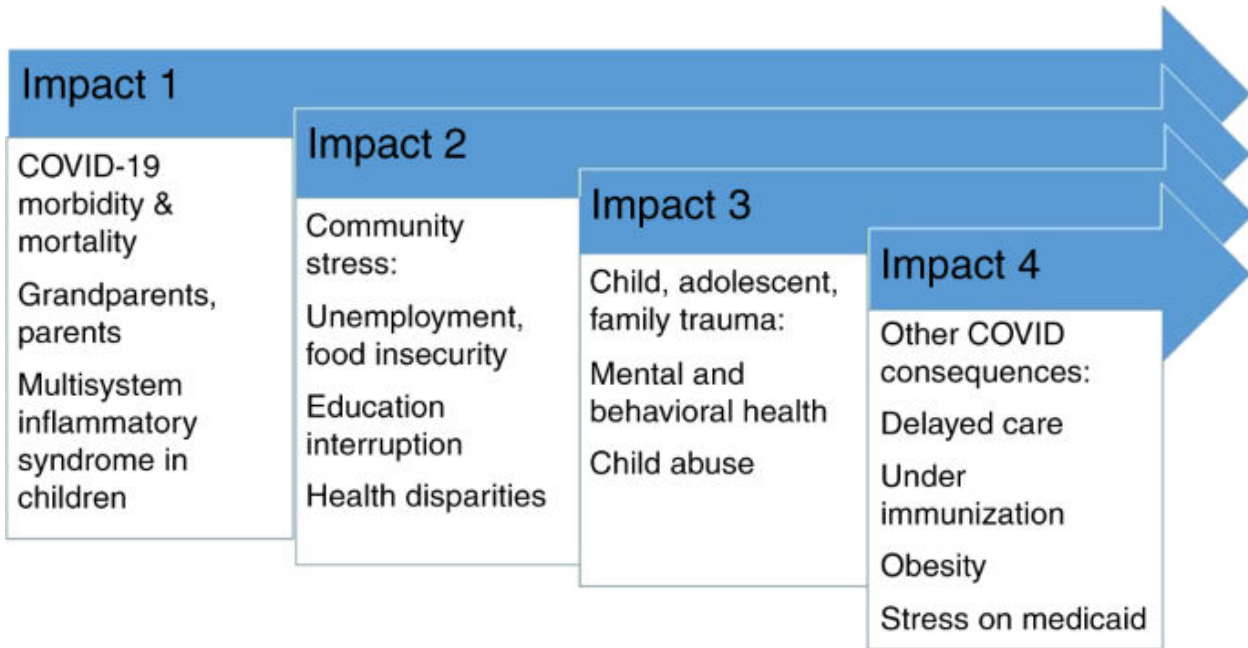
An increase in parental stress levels during a pandemic, a factor that directly interferes in children's quality of life, is therefore evident. Anxiety, excessive concern with cleanliness, excessive fear of falling ill or losing a loved one,[3] concern for the elderly, increased domestic accidents, mood disorders, anxiety disorder, panic, or obsessive-compulsive disorder, and post-traumatic stress are consequences that children and adolescents may experience, according to research into pandemic situations similar to the current one.[4]

Genetic developmental programming is strongly influenced by the environment. In an environment with social restrictions — where play and leisure activities are only possible within the home environment; where people wear masks and the learning of facial expressions, communication, and language is restricted;[8] and where demonstrating affection is discouraged by many — there is a tendency towards limitations in the formation of certain areas of the



brain, including the social brain, with consequent impairment in the acquisition of cognitive, behavioral, social, and communication skills.[5]

Social isolation taken as a prophylactic measure during pandemics is important, but may have several negative impacts — such as anxiety and stress in adults and also in children — since free socialization and relationships are important for well-being, increasing social behaviors and stimulating synaptic connections, favoring the construction of the social brain.[7] Physical activities relevant to adequate physical conditioning, emotional well-being, and growth and development in childhood are also restricted.[6]



**Fig.1: Physical and social development of children and during late childhood period**

## II. OBSERVATIONS

It has been observed the household income of many families with children was affected during COVID-19 due to job loss and lost wages in Jabalpur. Economic insecurity is consistently linked to children’s adverse development, academic achievement, and health outcomes. It may affect their ability to consistently access healthy foods, safe transportation, and housing. Mounting economic stressors can increase children’s risk for exposure to violence. Along with stay-at-home orders during COVID-19,[9] some children may have been increasingly exposed to child abuse and neglect, intimate partner violence at home, and sexual violence. Children’s increased online activity also puts them at increased risk for online sexual exploitation, cyberbullying, online risk-taking behavior, and exposure to potentially harmful content. It is important for parents and caregivers to maintain a trustworthy relationship and open communication with children, watching for behavior changes that may signal distress.[10]





**Fig.2: Impact of covid-19 on children in Jabalpur, India**

The long-term impact of the COVID-19 pandemic and implications for children's exposure especially of late childhood to violence remain largely unknown. However, based on the literature and mounting anecdotal evidence,[11] some broad directions are emerging. The data presented in this brochure confirm that the establishment of national lockdowns and containment actions taken by Jabalpur government have resulted in disruptions of child protection services by either forcing closures or requiring significant adjustments to the way services are delivered. In many cases, movement restrictions and social distancing mean that child welfare and social workers are no longer conducting in person visits, whether at home or in an office, and much of this work is now being conducted remotely – either online or over the phone. [12]



**Fig.3: Many more cases of violence, child marriage, female genital mutilation, unintended pregnancy expected due to the COVID-19 pandemic in Jabalpur, MP**



**Table.1: Multivariable analysis of predictive factors for severe/critical coronavirus disease 2019-20 in Jabalpur, MP, children in India**

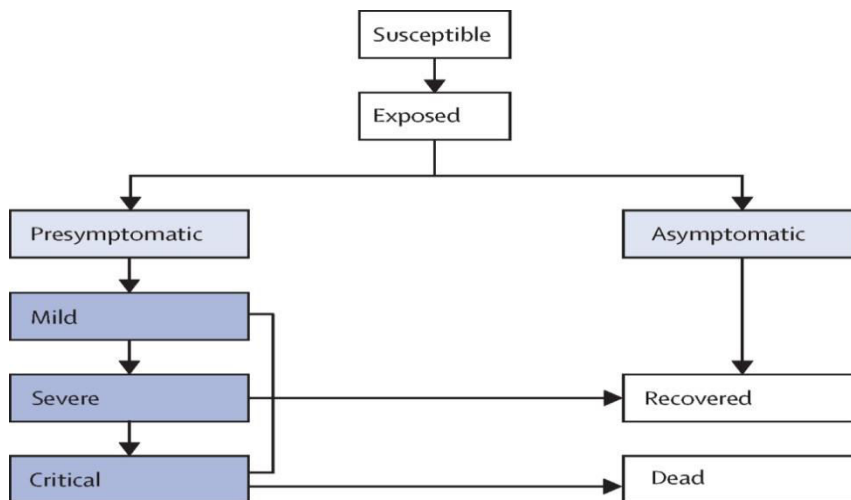
Variables	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Infant	2.38	1.26–4.88	0.008	4.65	1.90–11.38	< 0.001
Comorbidities	3.82	1.03–14.18	0.045	8.08	1.79–36.41	0.007
Cough	1.60	1.14–2.24	0.006	2.41	1.32–4.39	0.004

OR = odds ratio; CI = confidence interval.

Mechanisms for reporting and referring cases of violence against children have also been affected. Child helplines in particular have become even more critical, particularly in places where regular reporting mechanisms have been interrupted. The effects on service delivery are likely exacerbated in contexts where child protection systems were already weak prior to the pandemic.[13] In times of crisis, governments should prioritize maintaining or adapting critical prevention and response services to protect children from violence. This includes designating social service workers as essential and ensuring they are protected, strengthening child helplines, and making positive parenting resources available. In particular, governments must provide additional resources to child helplines so they can operate effectively in the context of pandemics and other crises, including by enhancing training on child-friendly counselling and adapting referral mechanisms. In addition to the critical role of health care workers, social service professionals must also be acknowledged as a critical part of the COVID-19 response for children, thereby recognizing these unsung heroes and the vital support they offer to children and families.[14]

### III. DISCUSSION

Although medical literature shows that children are minimally susceptible to 2019-Corona virus disease (COVID-19), they are hit the hardest by psychosocial impact of this pandemic in many cities of India including Jabalpur. [17]Being quarantined in homes and institutions may impose greater psychological burden than the physical sufferings caused by the virus. School closure, lack of outdoor activity, aberrant dietary and sleeping habits are likely to disrupt children's usual lifestyle and can potentially promote monotony, distress, impatience, annoyance and varied neuropsychiatric manifestations.[15,16]



**Fig.4. Study of symptoms and their manifestations**

Incidences of domestic violence, child abuse, adulterated online contents are on the rise. Children of single parent and frontline workers suffer unique problems.[20] The children from marginalized communities are particularly susceptible to the infection and may suffer from extended ill-consequences of this pandemic, such as child labor, child trafficking, child marriage, sexual exploitation and death etc.[18] Parents, pediatricians, psychologists, social workers, hospital authorities, government and non-governmental organizations have important roles to play to mitigate the psychosocial ill-effects of COVID-19 on children and adolescents. To provide the basic amenities, social security, medical care, and to minimize the educational inequities among the children of the different strata of the society are foremost priorities.[19]



**Fig.5. Checking children for Covid-19**

The first wave of COVID-19 came as a surprise to everyone, where the main concern was to understand what is this “new normal”. [22] Each age group faced its share of challenges, however for many children it was tough handling online classes, with no outdoor games and also understanding what is a “pandemic” in the first wave. [23] The second wave has been a different ball game altogether, from merely adapting to this pandemic to understanding illness and death, and seeing it up close. The virus has not just impacted the physical but also the mental health of children in Jabalpur. [21]

NCPCR reported that at least 3,621 children have orphaned due to COVID-19 and 26,000 lost one parent. The dire state our country has gone through subjected everyone to a situation that left people hopeless and helpless. [24] Children who are dependent on adults for their basic needs and have been exposed to an overwhelming stimulus, having witnessed so much, their childhood ‘snatched away’ from them, has had a major impact on their psyche. [25]

India has approximately 472 million children under the age of 18 years, and with the coming of the third wave, it is ever so important to shed light on the mental health of children and address the challenges being faced by them. [26]

Indian youth have been often reported with high levels of psychological distress, are now experiencing a four-fold increase in anxiety and depressive symptoms. This is indicative of the profound impact of the pandemic on the mental well-being of children, making it ever so essential to acknowledge this. [27]





**Fig.6. Breathing exercises for children**

Another crucial aspect associated with this pandemic has been the “lockdown”. It has had a detrimental effect on the mental health of many children in Jabalpur. Earlier children would go to schools and parks which gave them the opportunity to socialize, however with these public places being unavailable, children especially are having a hard time. As adults, it is easier to make sense of the lockdown, but for children, it is becoming increasingly difficult to stay in, and it is seen that children respond by becoming stubborn and throwing tantrums. For adolescents, it is challenging to remain confined within the home during this stage, where they seek support from their peers and want to explore the world, as a result, it is seen that their mental health has taken a huge blow. They are especially experiencing high levels of emotional distress, which leads to an increase in substance misuse, suicidal thoughts and acting out behaviors. Likewise, the lockdown has also created chaos in the routine followed by children due to a lack of certainty of what to do next and limited activities.

Furthermore, this pandemic is difficult for children who have developmental disorders and require continuous support. A survey by WHO reported that due to the pandemic there is a decline in mental health services by 93 percent while the need is heightened.[26]

It is important to address these issues as soon as the child begins to show signs of distress because if not tackled in a timely manner, they can lead to these children developing psychological disorders. Some behaviors to look out for are: withdrawal, acting out, low mood, lack of motivation, helplessness, being over involved in social media and avoiding interactions, breakdown of trust, or tantrums. This is an unprecedented situation and children especially require all the support to help them overcome these challenging times.[28]

The second wave of COVID-19 has shaken each individual to the core, and it has had jarring effects on mental health. These times are especially difficult for children who have just started their lives witnessing a pandemic. As adults, it is ever more important for us to step up to ensure that this negative effect can be minimized as much as possible and join hands together to provide all the support to contribute towards the well-being of children.[24]

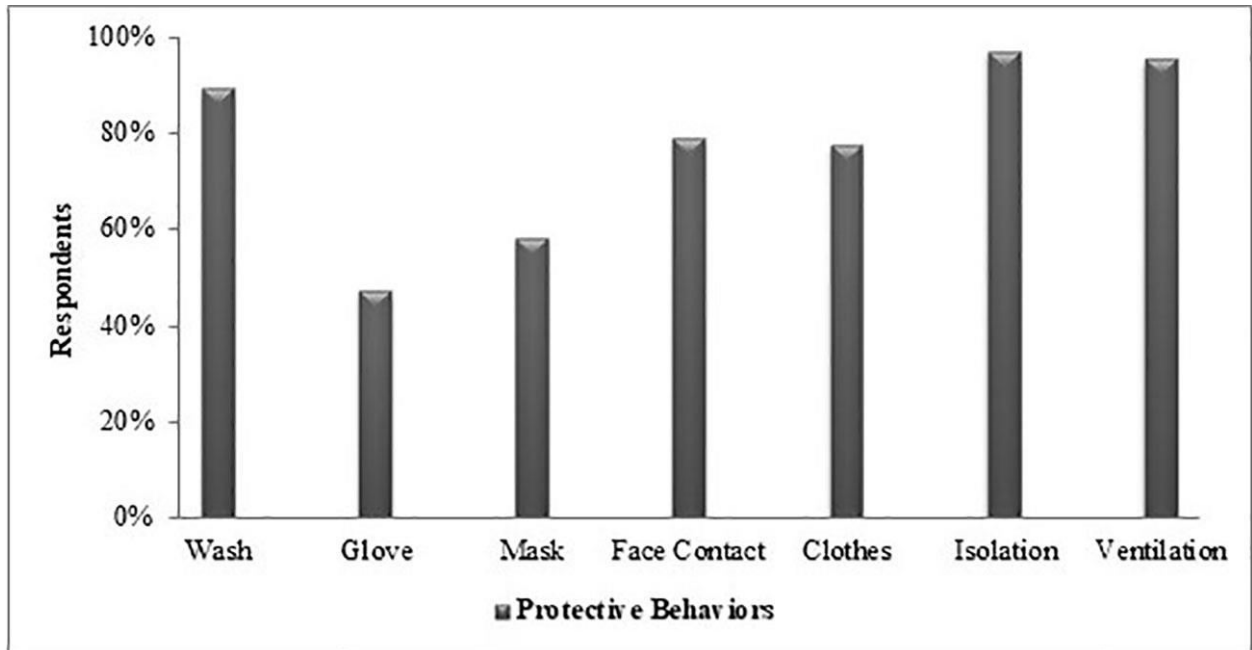


Fig.7. Safety measures in Jabalpur Children-Teaching them of hygiene and health, social distancing and masks

#### IV. RESULTS





- 1. In a situation like this it is normal to feel sad, worried, confused, scared or angry. Know that you are not alone and talk to someone you trust, like your parent or teacher so that you can help keep yourself and your school safe and healthy. o Ask questions, educate yourself and get information from reliable sources
- 2. Protect yourself and others o Wash your hands frequently, always with soap and water for at least 20 seconds o Remember to not touch your face o Do not share cups, eating utensils, food or drinks with others [20]
- 3. Be a leader in keeping yourself, your school, family and community healthy. o Share what you learn about preventing disease with your family and friends, especially with younger children o Model good practices such as sneezing or coughing into your elbow and washing your hands, especially for younger family members [16]
- 4. Don't stigmatize your peers or tease anyone about being sick; remember that the virus doesn't follow geographical boundaries, ethnicities, age or ability or gender.
- 5. Tell your parents, another family member, or a caregiver if you feel sick, and ask to stay home[19]

Age-specific health education Below are suggestions on how to engage students of different ages on preventing and controlling the spread of COVID-19 and other viruses. Activities should be contextualized further based on the specific needs of children (language, ability, gender, etc.).

#### Preschool

- Focus on good health behaviors, such as covering coughs and sneezes with the elbow and washing hands frequently
- Sing a song while washing hands to practice the recommended 20 second duration. - Children can “practice” washing their hands with hand sanitizer
- Develop a way to track hand washing and reward for frequent/timely hand washing
- Use puppets or dolls to demonstrate symptoms (sneezing, coughing, fever) and what to do if they feel sick (i.e. their head hurts, their stomach hurts, they feel hot or extra tired) and how to comfort someone who is sick (cultivating empathy and safe caring behaviors) [21]
- Have children sit further apart from one another, have them practice stretching their arms out or ‘flap their wings’, they should keep enough space to not touch their friends.



Fig.8: Primary School

- Make sure to listen to children's concerns and answer their questions in an age-appropriate manner; don't overwhelm them with too much information. Encourage them to express and communicate their feelings. Discuss the different reactions they may experience and explain that these are normal reactions to an abnormal situation.
- Emphasize that children can do a lot to keep themselves and others safe. - Introduce the concept of social distancing (standing further away from friends, avoiding large crowds, not touching people if you don't need to, etc.) - Focus on good health behaviors, such as covering coughs and sneezes with the elbow and washing hands [22]
- Help children understand the basic concepts of disease prevention and control. Use exercises that demonstrate how germs can spread. For example, by putting colored water in a spray bottle and spraying over a piece of white paper. Observe how far the droplets travel. [23]



**Fig.9: educating children to take care**

- Demonstrate why it is important to wash hands for 20 seconds with soap and water - Put a small amount of glitter in students' hands and have them wash them with just water, notice how much glitter remains, then have them wash for 20 seconds with soap and water
- Have students analyze texts to identify high risk behaviors and suggest modifying behaviors For example, a teacher comes to school with a cold. He sneezes and covers it with his hand. He shakes hands with a colleague. He wipes his hands after with a handkerchief then goes to class to teach. [24]

### **Lower Secondary School**

- Make sure to listen to students' concerns and answer their questions.
- Emphasize that students can do a lot to keep themselves and others safe. - Introduce the concept of social distancing - Focus on good health behaviors, such as covering coughs and sneezes with the elbow and washing hands - Remind students that they can model healthy behaviors for their families
- Encourage students to prevent and address stigma - Discuss the different reactions they may experience and explain these are normal reactions to an abnormal situation. Encourage them to express and communicate their feelings [26]
- Build students' agency and have them promote facts about public health. - Have students make their own Public Service Announcements through school announcements and posters
- Incorporate relevant health education into other subjects - Science can cover the study of viruses, disease transmission and the importance of vaccinations - Social studies can focus on the history of pandemics and evolution of policies on public health and safety - Media literacy lessons can empower students to be critical thinkers and makers, effective communicators and active citizens[28]

### **Upper Secondary School**

- Make sure to listen to students' concerns and answer their questions.
- Emphasize that students can do a lot to keep themselves and others safe. - Introduce the concept of social distancing



- - Focus on good health behaviors, such as covering coughs and sneezes with the elbow and washing hands Encourage students to prevent and address stigma - Discuss the different reactions they may experience and explain these are normal reactions to an abnormal situation. Encourage them to express and communicate their feelings. [29]
- Incorporate relevant health education into other subjects - Science courses can cover the study of viruses, disease transmission and the importance of vaccinations - Social studies can focus on the history of pandemics and their secondary effects and investigate how public policies can promote tolerance and social cohesion. [27]
- Have students make their own Public Service Announcements via social media, radio or even local tv broadcasting - Media literacy lessons can empower students to be critical thinkers and makers, effective communicators and active citizens.[28]

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