



THE EFFECT OF COVID-19 LOCKDOWN ON BEHAVIOUR IN CHILDREN AGED 6-12 YEARS: A SURVEY

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ABSTRACT The COVID-19 pandemic massively curtails social interactions and public life. For children educational institutions such as schools were closed and have started teaching online. governments recommend and enforce social distancing, that is, keeping physical distance from others, including friends and family members from different households. Many children are experiencing lack of normal routine, play resulting in psychological distress, leading to changes in their behaviour. Analysing their reactions and emotions is essential and may pave way for professionals like Occupational Therapists to provide appropriate intervention during the ongoing Coronavirus outbreak. A Retrospective Survey design assessed the effects of the COVID-19 pandemic on Behaviour among children in a Metropolitan city of India, by using online parent-reported questionnaires.

61.33% of participants belonged to a nuclear family with 46.41% of Survey entrants bearing one child, only. Sibling interaction often noted by parents in 44.33% children along with 68.04% increase in the same, during the COVID-19 induced Lockdown. 34.81% parents reported increase in mood changes. 49.17% reported increased irritability & 62% reported boredom in their children.

The observed changes in the behaviour patterns in the current study may precipitate as negative long term emotional & psychological aftermath in children. The data revealed by the Survey may function as an evidence-based gesticulation to Occupational Therapy practitioners to remain armed for further actions amidst the Pandemic. Further, research regarding the long term effect on the Behaviour of children, is recommended especially in the Indian context.

KEYWORDS :

INTRODUCTION:

On March 11, 2020, the World Health Organization declared a Pandemic in relation to infection with severe acute respiratory syndrome coronavirus 2, a novel coronavirus, hereafter referred to as COVID-19.¹ In order to control the transmission of the SARS-COV-2 virus, India experienced a series of nation-wide lockdown commencing from 25th March 2020. This led to extensive restrictions of public life. Events and gatherings were cancelled, shops and recreational facilities were closed, and employees had to work from home, if possible. In addition, educational institutions such as schools and universities were closed and began to move teaching online. governments recommend and enforce social distancing, that is, keeping physical distance from others, including friends and family members from different households. Hence, the COVID-19 pandemic massively curtails social interactions and public life.² However, most studies have been focused on adult populations and the psychological as well as behavioural impact of quarantine on children remains unclear. Due to the lower incidence of infection and mortality than adults, professionals were less focusing on the unique clinical features of COVID-19 and mental health status in children.

Children have unique and specific needs that are disturbed by COVID-19 quarantine that includes not only home confinement but the inability to go to school and interact with peers and teachers.³ It has been shown that children are fearful about the infection of self and family members, sometimes didn't like the strict social distancing or quarantine measures, felt anxious about uncertainties regarding when the pandemic will end, feel isolated due to prolonged and widespread closure of the schools, parks, theatres and other public places and lack of opportunity to play outdoor games.⁴

As a part of the Pandemic response, restrictions on regular psychological support systems, such as meeting with friends, physical exercise. The combination of risk factors such as the multitude of change in daily lives, lack of exposure to routine context i.e. schools, information overload about the pandemic, fear of the unknown, coupled with the reduction in psychological support, can result in heightened anxiety in adults and children alike.⁵ Previous epidemiological studies, have described the same.^{6,7} According to the American Psychological Association (APA), anxiety disorders are the most prevalent of all mental health disorders that present in children and youth.⁸ When not expressed verbally, it may reflect through new internalizing behaviours such as being more withdrawn and quiet or by externalizing behaviours such as tantrums.⁹

Due to the lower incidence of infection and mortality than adults, professionals were less focusing on the unique clinical features of COVID-19 and mental health status in children. Analysing their reactions and emotions is essential and may pave way for professionals like Occupational Therapists to provide appropriate intervention during the ongoing Coronavirus outbreak. Therefore, the current study highlights the behavioural consequences of the COVID-19 Pandemic in children.

AIMS & OBJECTIVES:

The Survey aims at analysing the impact of Lockdown restriction imposed due to the COVID-19 Pandemic, on behaviour in children aged between 6 to 12 years in an Indian Metropolitan City.

Objectives Of The Study Consisted Of The Following:

1. Assessing the extent and frequency of complains of Boredom by children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
2. Assessing the extent and frequency of Laziness in children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
3. Assessing the extent and frequency of associated behavioural problems in children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
4. Evaluating the change in sleep habits in children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
5. Analysing the extent and frequency of indulging in a fight with siblings by children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
6. Analysing the extent and frequency of parent interaction by children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
7. Analysing social interactive skills-in children aged 6-12 years, during the Lockdown period of the COVID-19 Pandemic.
8. Analysing the extent and frequency of Engagement of children in their hobbies, during the Lockdown period of the COVID-19 Pandemic.

METHODOLOGY:

A Retrospective Survey design assessed the effects of the COVID-19 pandemic on Behaviour among children in a Metropolitan city of India, by using online parent-reported questionnaires.

A Parent-reported Behaviour Questionnaire was formulated by the investigators, based on pre-existing Children Behaviour

Questionnaires (Parent version) along with assessing the changes in their ward's behaviour and their respective level of interaction with Family Members (parents and siblings), relatives, neighbours and peers, during the Lockdown restrictions in view of the COVID-19 Pandemic.^{10,11,12} It initially comprised of 32 behaviour related questions, presented in English language only. This questionnaire

underwent subsequent validation for its Content by five Occupational Therapist. Eight questions depicted poor Content validity, followed by their removal from the Survey. While, 28 questions revealed adequate Content validity (0.80) and were incorporated into the Final draft of the Questionnaire. Illustration 1(a) & (b) consist of the Parent-Reported Behaviour Questionnaire used in the current Study.

Please enter the Name of your child * Short answer text	Has the use of Digital Games by your child * <input type="radio"/> Increased during the Lockdown <input type="radio"/> Decreased during the Lockdown <input type="radio"/> Same as before the Lockdown	Do you feel that your(Parent) involvement in your child's play * <input type="radio"/> Has Increased during the Lockdown <input type="radio"/> Has Decreased during the Lockdown <input type="radio"/> Same as Before the Lockdown
What is the age of your child? * <input type="radio"/> 6-7 Years <input type="radio"/> 8-9 Years <input type="radio"/> 10-11 Years <input type="radio"/> 11-12 Years	How much time is your child Spending on the Screen, daily ? Short answer text	How frequently does your child play with His/Her Siblings(if any), during the COVID-19 Lockdown <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never <input type="radio"/> Not Applicable (If NO SIBLINGS)
Please mention the Standard your child was studying in, before the Lockdown * Short answer text	How frequently does your child use Indoor Games with Sitting (Table top Games), during the COVID-19 Lockdown? <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never	Has the frequency of your child playing with His/Her Siblings(if any) <input type="radio"/> Has Increased during the Lockdown <input type="radio"/> Has Decreased during the Lockdown <input type="radio"/> Same as before the Lockdown <input type="radio"/> Not Applicable (If NO SIBLINGS)
Do you Stay in a * <input type="radio"/> Nucleor Family <input type="radio"/> Joint Family	How many children stay together at your Home? * <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> More Than 3	How frequently does your child miss playing with His/Her peers, during the COVID-19 Lockdown? * <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never
Which is the preferred MEDIA OF PLAY by your Child, during the COVID-19 Lockdown? (Can choose more than 1 option) <input type="checkbox"/> Indoor Games with Sitting (Table top Games) <input type="checkbox"/> Indoor Games with some Physical activity <input type="checkbox"/> Video Games (such as Playstation) <input type="checkbox"/> Digital Games played Alone <input type="checkbox"/> Digital Games played with Peers	Has the use of Indoor Games with Sitting (Table top Games) by your Child * <input type="radio"/> Increased during the Lockdown <input type="radio"/> Decreased during the Lockdown <input type="radio"/> Same as before the Lockdown	Has the frequency of your child missing to play with His/Her Peers * <input type="radio"/> Increased during the Lockdown <input type="radio"/> Decreased during the Lockdown <input type="radio"/> Same as Before the Lockdown
Has the Mode of Play of your child changed during the COVID-19 lockdown? * <input type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Maybe	How frequently does your child use Indoor Games with Physical activity, during the COVID-19 Lockdown? * <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never	How frequently does your child engage in His/Her Hobbies, during the COVID-19 Lockdown? * <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never
How much time is spent by your child in PLAY per day (when awake), during the COVID-19 Lockdown? * <input type="radio"/> 1-4th Time of the Day <input type="radio"/> 1/2 Time of the Day <input type="radio"/> 3-4th Time of the day <input type="radio"/> Full time of the day	Has the use of Indoor Games with Physical activity by your Child * <input type="radio"/> Increased during the Lockdown <input type="radio"/> Decreased during the Lockdown <input type="radio"/> Same as before the Lockdown	The frequency of engagement of your child into His/Her Hobbies * <input type="radio"/> Has Increased during the Lockdown <input type="radio"/> Has Decreased during the Lockdown <input type="radio"/> Same as Before the Lockdown
Has the Overall Playtime of your child * <input type="radio"/> Increased during the Lockdown <input type="radio"/> Decreased during the Lockdown <input type="radio"/> Same as Before the Lockdown	How Frequently do you(Parent) play with your child, during the COVID-19 Lockdown? * <input type="radio"/> Every time <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never	

Illustration 1(a):the Parent-reported Questionnaire Included In The Current Survey

How frequently does your child complain of Boredom, during the COVID-19 Lockdown? *	How frequently does your child become Angry, during the COVID-19 Lockdown? *	How frequently does your child interact with You (Parent), during the COVID-19 Lockdown? *	How frequently does your child ask you about Coronavirus, During the COVID-19 Lockdown? *
<input type="radio"/> Every time	<input type="radio"/> Every time	<input type="radio"/> Every time	<input type="radio"/> Every time
<input type="radio"/> Often	<input type="radio"/> Often	<input type="radio"/> Often	<input type="radio"/> Often
<input type="radio"/> Sometimes	<input type="radio"/> Sometimes	<input type="radio"/> Sometimes	<input type="radio"/> Sometimes
<input type="radio"/> Rarely	<input type="radio"/> Rarely	<input type="radio"/> Rarely	<input type="radio"/> Rarely
<input type="radio"/> Never	<input type="radio"/> Never	<input type="radio"/> Never	<input type="radio"/> Never

Has the Boredom of your child *	Has the frequency of becoming Angry of your child *	Has the frequency of your child's interaction with you (Parent) *	Is there a change in your Place of Stay, during the COVID-19 Lockdown? *
<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Increased during the Lockdown	<input type="radio"/> YES, there is a CHANGE of PLACE, during the Lockdown
<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> decreased during the Lockdown	<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> NO, staying at the SAME PLACE, as before the Lockdown
<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Same as before the Lockdown	

How, Do you think the COVID-19 Lockdown has impacted your Child's PLAY and BEHAVIOUR?

Long answer text

Do you feel your child has become Lazy, during the COVID-19 Lockdown? *	How frequently does your child Cry during the COVID-19 Lockdown? *	How frequently does your child follow your Instructions or Commands, during the COVID-19 Lockdown? *
<input type="radio"/> Every time	<input type="radio"/> Every time	<input type="radio"/> Every time
<input type="radio"/> Often	<input type="radio"/> Often	<input type="radio"/> Often
<input type="radio"/> Sometimes	<input type="radio"/> Sometimes	<input type="radio"/> Sometimes
<input type="radio"/> Rarely	<input type="radio"/> Rarely	<input type="radio"/> Rarely
<input type="radio"/> Never	<input type="radio"/> Never	<input type="radio"/> Never

Has the Laziness of your child *	Has the frequency of Crying of your child *	Has the frequency of instruction or Command following of your child *
<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Increased during the Lockdown
<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> Decreased during the Lockdown
<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Same as before the Lockdown

Has the Sleeping Time of your child *	How frequently, do you think your child has mood changes, during the COVID-19 Lockdown? *	How frequently does your child interact with others in the house or distant relatives (Through Face-to-Face conversations, Telephones, Video calls etc), during the COVID-19 Lockdown? *
<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Every time	<input type="radio"/> Every time
<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> Often	<input type="radio"/> Often
<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Sometimes	<input type="radio"/> Sometimes
	<input type="radio"/> Rarely	<input type="radio"/> Rarely
	<input type="radio"/> Never	<input type="radio"/> Never

Has the Sleep-Wake Cycle of your child changed, during the COVID-19 Lockdown? *

☐ YES

☐ NO

☐ MAYBE

How frequently does your child become Irritable, during the COVID-19 Lockdown? *	How frequently does your child fight with His/Her Siblings (If Any), during the COVID-19 Lockdown? *	Does your child have accessibility to interact with other children in Neighbourhood? *
<input type="radio"/> Every time	<input type="radio"/> Every time	<input type="radio"/> Yes
<input type="radio"/> Often	<input type="radio"/> Often	<input type="radio"/> No
<input type="radio"/> Sometimes	<input type="radio"/> Sometimes	
<input type="radio"/> Rarely	<input type="radio"/> Rarely	
<input type="radio"/> Never	<input type="radio"/> Never	

Has the frequency of becoming Irritable of your child *	The frequency of your child fighting with His/Her Siblings (If Any)	If YES, Please Specify how your child interacts with other Children in Neighbourhood?
<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Increased during the Lockdown	<input type="radio"/> Face To Face Interaction at Home
<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> Decreased during the Lockdown	<input type="radio"/> Interactions at Sleeping or Waking
<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Same as before the Lockdown	<input type="radio"/> Digital / Mobile Interaction
	<input type="radio"/> Not Applicable (If NO SIBLINGS)	

How frequently does your child ask you about Coronavirus, During the COVID-19 Lockdown? *
<input type="radio"/> Every time
<input type="radio"/> Often
<input type="radio"/> Sometimes
<input type="radio"/> Rarely
<input type="radio"/> Never

Illustration 1(b): the Parent-reported Questionnaire Included In The Current Survey (cont)

A Google form was composed for the same. Page 1, constituted of Demographic information, followed by the Twenty-three previously validated play related questions, to be subjectively filled by parents. A link, directing the user or the parents towards the Survey was created.

The Inclusion Criteria consisted of parents or legal guardian's to children aged 6-12 years and residing in an Indian Metropolitan city. Individuals currently taking medication for any Psychiatric illness or were unable to read English were excluded. Parents of children suffering from any physical or mental illness were not considered in the Study.

A convenience sampling strategy was focused towards recruiting a general population of parents during the COVID-19 Pandemic, residing in an Metropolitan City. In order to follow Social distancing norms and avoid in-person contact, the potential respondents were electronically approached to participate in the Survey through various Social media platforms such as WhatsApp, Facebook, twitter, Instagram etc.

Parents who showed interest and agreement to participate in the survey were first directed to a Screening form. If falling into the inclusion criteria, parents were instructed about the purpose and the procedure of the Study with a Parent Information sheet and on agreement for participation, an Online Parent Consent was provided.

Successful fulfilment of all the mentioned criteria's, redirected the parents to the Demographic Page of the Survey, followed by the Twenty-Eight Behaviour associated questions regarding their children (questionnaire attached-Image 1).

In case of multiple children, Individuals were notified for filling the Google form separately for each sibling.

Table-1.0 Describes The Extent And Frequency Of The Certain Behaviour During The Covid-19 Lockdown, Considered In The Survey (as Per Subjective Reporting By Parents)

BEHAVIOUR	EXTENT DURING COVID-19 LOCKDOWN		FREQUENCY DURING COVID-19 LOCKDOWN							
Mood Changes	EVERYTIME	4.98%	<table><tr><td>INCREASED</td><td>34.81 %</td></tr><tr><td>DECREASED</td><td>7.18%</td></tr><tr><td>SAME AS BEFORE</td><td>58.01%</td></tr></table>		INCREASED	34.81 %	DECREASED	7.18%	SAME AS BEFORE	58.01%
	INCREASED	34.81 %								
	DECREASED	7.18%								
	SAME AS BEFORE	58.01%								
	OFTEN	24.86%								
SOMETIMES	49.72%									
RARELY	6.63%									
NEVER	13.81%									
Boredom	EVERYTIME	16.57%	<table><tr><td>INCREASED</td><td>65.74%</td></tr><tr><td>DECREASED</td><td>27.62%</td></tr><tr><td>SAME AS BEFORE</td><td>6.62%</td></tr></table>		INCREASED	65.74%	DECREASED	27.62%	SAME AS BEFORE	6.62%
	INCREASED	65.74%								
	DECREASED	27.62%								
	SAME AS BEFORE	6.62%								
	OFTEN	26.52%								
SOMETIMES	49.17%									
RARELY	3.31%									
NEVER	4.41%									
Laziness	EVERYTIME	5.52%	<table><tr><td>INCREASED</td><td>48.62%</td></tr><tr><td>DECREASED</td><td>12.07%</td></tr><tr><td>SAME AS BEFORE</td><td>38.67%</td></tr></table>		INCREASED	48.62%	DECREASED	12.07%	SAME AS BEFORE	38.67%
	INCREASED	48.62%								
	DECREASED	12.07%								
	SAME AS BEFORE	38.67%								
	OFTEN	15.47%								
SOMETIMES	46.96%									
RARELY	4.97%									
NEVER	27.07%									
Irritability	EVERYTIME	3.31%	<table><tr><td>INCREASED</td><td>49.17%</td></tr><tr><td>DECREASED</td><td>8.29%</td></tr><tr><td>SAME AS BEFORE</td><td>42.54%</td></tr></table>		INCREASED	49.17%	DECREASED	8.29%	SAME AS BEFORE	42.54%
	INCREASED	49.17%								
	DECREASED	8.29%								
	SAME AS BEFORE	42.54%								
	OFTEN	23.20%								
SOMETIMES	55.80%21									
RARELY	8.29%									
NEVER	9.39%									
Angry	EVERYTIME	1.10%	<table><tr><td>INCREASED</td><td>33.15 %</td></tr><tr><td>DECREASED</td><td>7.73%</td></tr><tr><td>SAME AS BEFORE</td><td>59.12%</td></tr></table>		INCREASED	33.15 %	DECREASED	7.73%	SAME AS BEFORE	59.12%
	INCREASED	33.15 %								
	DECREASED	7.73%								
	SAME AS BEFORE	59.12%								
	OFTEN	19.89%								
SOMETIMES	59.67%									
RARELY	11.05%									
NEVER	8.29%									
Crying	EVERYTIME	1.66%	<table><tr><td>INCREASED</td><td>22.09%</td></tr><tr><td>DECREASED</td><td>13.26%</td></tr><tr><td>SAME AS BEFORE</td><td>64.08%</td></tr></table>		INCREASED	22.09%	DECREASED	13.26%	SAME AS BEFORE	64.08%
	INCREASED	22.09%								
	DECREASED	13.26%								
	SAME AS BEFORE	64.08%								
	OFTEN	16.02%								
SOMETIMES	39.77%									
RARELY	14.91%									
NEVER	27.07%									

COVID-19 Lockdown. Similarly, 64.08% participants observed no change in the frequency of their child's crying behaviour.

61.33% of participants belonged to a nuclear family with 46.41% of Survey entrants bearing one child, only. Sibling interaction often noted by parents in 44.33% children along with 68.04% increase in the same, during the COVID-19 induced Lockdown.

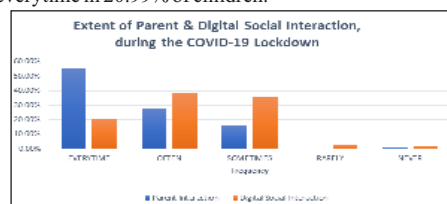
Graph 1.0 provides a vivid description of the extent and frequency of Parent and Digital Social interaction of children, in times of Lockdown. Everytime and Often Parent interaction was identified in 55.24% and 27.62% of children, respectively. Although, digital social

RESULTS:

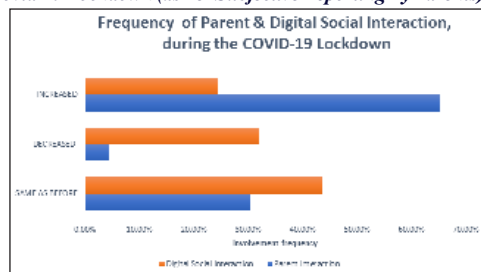
181 Parents, fulfilling the eligibility criteria were considered. The Questionnaire was completed by 11.05%, 18.78%, 11.05%, 11.05%, 22.65% and 25.41% Parents of children aged 6-7 years, 7.1 - 8 years, 8.1-9 years , 9.1-10 years, 10.1-11 years and 11.1-12 years, respectively.

Table 1. describes the extent and frequency of children's behaviour, in times of Coronavirus induced lockdown. 34.81% parents reported an increased frequency of their child's mood changes during the COVID-19 Lockdown. While, 49.72% parents noted the extent of mood changes in their wards to remain sometimes. 24.86% parents reported Often mood changes in their child. 65.74% of children were reported to have increased boredom during the Lockdown period, with 16.57% and 49.17% children complaining of boredom everytime and sometimes, respectively. Data revealed 48.62% increment in laziness during the lockdown. 46.96% participants described Sometimes, as the extent of their ward's lazy behaviour. Irritability was Often recorded in 23.20% of children. 49.17% parents observed increased irritability in children during the lockdown phase. On the contrary, 59.12% of children were reported to get angry at the same frequency as prior to the

interaction through telephonic conversations, Video calls etc was found everytime in 20.99% of children.



Graph-1.0 :the Extent Of Parent And Digital Social Interaction, During

The Covid-19 Lockdown (as Per Subjective Reporting By Parents)

Graph-2.0 Describes the Frequency of Parent and Digital Social Interaction, during the COVID-19 Lockdown (As per subjective reporting by Parents)

Data disclosed, 65.19% and 24.31% increment in Parent and digital social interaction, respectively (Graph 2.0).

Command following for given instructions was Often and sometimes considered by 51.39% and 23.20% of children, respectively. In comparison to pre-lockdown period, 59.12% children were informed to possess the same frequency of command following during the Coronavirus induced Lockdown. 55.25% parents described an increase in the frequency of missing peer play. Engagement into hobbies was sometimes and often noted in 46.41% and 33.15% children, respectively. This was followed by 52.49% increase in individual Hobby engagement within the Lockdown phase, as informed by parents in the Survey Questionnaire.

DISCUSSION:

COVID-19 has been perceived as a major threat to global health, affecting human lives by influencing their everyday behaviour and causing feelings of panic anxiety, depression, and often triggering intense dread.¹³ It has been indicated that compared to adults, this pandemic may continue to have increased long term adverse consequences on children and adolescents.

65.74% participants reported increase in boredom complains by their children. The lack of personal space at home and other housing conditions can also have a significant impact on the mental health of children and parents based on previous evidence.¹⁴ For example, housing conditions, such as small apartments with limited views and indoor qualities, were related to depressive symptoms in a recent original study that investigated the effects of housing environment characteristics on mental health during the COVID-19 lockdown using a large sample of Italian university students.¹⁵ In accordance to the same, the current survey revealed 48.62% children with enhanced laziness during the Coronavirus Lockdown.

When emotional support and spiritual guidance from family members, teachers, as well as other significant peers and adults in their lives could not be met due to home confinement, deferred back-to-school and lifestyle changes, it adversely affected the mental health of children and adolescents.¹⁶ **49.17% and 33.15% parents disclosed increment in irritability and anger in their wards during the COVID-19 lockdown, which may be attributed to home confinement that could exacerbate the negative consequences on a child's mental health. This is a matter of concern as the same may create a vicious circle.**¹⁷

Research utilising fitness trackers (physical activity, sleep) and parent surveys (screen time, dietary intake), of 231 children aged 7–12 years about their health behaviours during and prior to the pandemic, found health behaviour is worsened at a greater rate after the pandemic onset compared to pre-pandemic trends.¹⁸ Majority parents in the study, started work from home during the pandemic.

They reported increased laziness, crying behaviour in children especially aged 6–8 years. The lack of parental control due to deprivation of constant monitoring, may have led to disowning the structured routine set by parents.

Erin Bluvus et al concluded pre-planned, structured activities during regular time provided by adults to have a positive impact on children's sleep, diet, physical activity, and screen time behaviours. Discontinuity in routine & enhanced exposure with adults at home, resulted in less healthy behaviours.¹⁸

Researchers fear that “COVID-19-related closures and mitigation strategies may inadvertently alter children's health behaviours by mimicking an ‘extended summer vacation’ environment, largely devoid of external structure that school or extracurricular activities.¹⁸ This Literature review further stated high levels of sedentary behaviour and screen time along with reduced physical activities levels could be attributed to continued pandemic restrictions and potential relaxed parental rules to allow children to connect with friends virtually. We have observed that the close relatives have started virtual meetings in pandemic, which in turn has increased the allocated screen time for children. Smartphones and social media, which was previously prevented by parents, have now become the only media for entertainment, information and the source of education for children, across the globe.

Some of the parents in the study reported increased digital media exposure leading to increased laziness & frequent mood changes. Another Cross Sectional Survey on the effect of children's lifestyle during COVID 19, observed 91.9% parents reporting effect on their children's lifestyle experienced moderate to high level anxiety affecting their nutrition, sleep, television-internet use, social activity, coursework time, and school success due to the pandemic.¹⁹ Prateek Kumar Panda et al conducted a systematic review, explaining adverse conditions in the immediate family environment like family members succumbed to Coronavirus infection, financial instability and perceived parental stress, to probably serve as a pre-requisite for behavioural problems in children during the Pandemic. The review identified anxiety, stress, sadness, boredom, depressive symptoms, sleep disturbance and fear for the situation as the predominant behavioural or emotional difficulties.²⁰

In the present Survey lack of interaction with peers may have led to disturbed sleep habits & subsequent increase in irritability. A study on the effect of disaster on the population stated various behavioural, psychological and emotional issues and instabilities were observed in older children and adolescents after the disaster. The psychological implications of the same could be in the form of PTSD (Post-Traumatic Stress Disorder), Depression, Anxiety, Emotional Distress and Sleep Disorders in children.²¹

The observed changes in the behaviour patterns in the current study may precipitate as negative long term emotional & psychological aftermath in children. A narrative review, concluded effective interventions should be given pre and post-disaster period to improve the adverse mental health effects of the disaster. The psycho-social education with clinical interventions may provide better outcomes because of the integration of various effective measures. Researchers recommended rehabilitation considering cultural context of the community and the needs of the affected population. Community empowerment is the holistic way to cope with any disasters including the current SARS COV-2 Pandemic.²²

Occupational therapists (OTist) being active members of paediatric intervention, play an integral role in improving quality of life in children.

Several parents were eager to fill the questionnaire. As the Questionnaire was administered online, parent bias remains a confounding limitation of the study. While attempting to answer the questionnaire, some parents reported extended insight regarding their child's emotional needs and unexpected drastic changes in his/her life. Thus, paving way for changes in their approach towards the same. Few parents also described spending longer time with their child & being able to know them better.

Occupational therapists (OTist) being active members of paediatric intervention, play an integral role in improving quality of life in children. As OTist, the investigators would like to propose some of interventions as supported by Kudchadkar S R et al like educational interventions (effective online learning, provision of psychosocial support and healthy lifestyle motivation through educational portals), dissemination of accurate information, limited but adequate exposure with news, discussion with children about what they heard or saw, behavioural therapy, setting sleep hygiene routines, exercise and healthy eating. Tele medicine to provide counselling or support to children at risk and to help parents, special sessions for positive parenting and social connectivity, inclusion of Schools and teachers in children wellness program, guidance about emotional awareness &

management strategies by experts, can be probable effective strategies to children lead a productive & healthy life.²³

COVID-19 Lockdown has negatively influenced children's tolerance, anxiety levels, social interaction patterns and mood fluctuations, may have long term effects on children behaviour. Occupational therapists are extensively involved in preventive & restorative interventions of typically developing children, who may fall victim to the adverse effects of the ongoing COVID-19 Pandemic. The data revealed by the Survey may function as an evidence based gesticulation to Occupational Therapy practitioners to remain armed for further actions amidst the Pandemic. Further, research regarding the long term effect of the ongoing Coronavirus Pandemic on the Behaviour of children, is recommended especially in the Indian context.

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