A STUDY ON EFFECTS OF MENTAL HEALTH ON CHILDREN AND ADOLESCENT DURING COVID-19 PANDEMIC IN A TERTIARY CARE CENTER – AN ONLINE STUDY

Darshan Yallappa Jotibannad¹, Kalagi Amit Kumar², Vijayaraj N³

¹Department of Psychiatry, Bowring and Lady Curzon Hospital, Bangalore, Karnataka, India

²Department of Psychiatry, Bangalore Medical College and Research Institute, Bangalore, Karnataka, India

³Department of Psychiatry, Karwar Institute of Medical Sciences, Karwar, Karnataka, India.

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Corresponding author: Darshan Yallappa Jotibannad

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Abstract

Background: A new corona virus was subsequently identified and was temporarily named the 2019 new corona virus. On 30th January 2020, the World Health Organization (WHO) announced that the emergence of a replacement corona virus (2019-nCoV) was a public health emergency of international concern. Infectious diseases became one among the main threats to global public health within the twenty first century; such diseases impact both physical health and psychological state. PTSD in youth is common and debilitating. In contrast to adult PTSD, relatively little is understood about the neurobiology of paediatric PTSD. This study is an effort to explore the Assessment of suspected covid 19 children for perceived levels of stress during covid 19 outbreaks.

Methods: The information required for the study was obtained through online means. Consent was obtained orally over phone before proceeding with the study. The questionnaire consisted of demographics variables and the questionnaire was shared online via Whatsapp and/or other means. The questionnaire was given in English.

The Children's Impact of Event Scale (CRIES 13) was used and the questions were multiple choice question (MCQ) type with 1 best response. In case of the patient not having an appropriate phone they were interviewed over the phone and the collected data was statistically analysed to ascertain any significance and association between each variable.

Results: Out of 54 children, two of them were found to have a score of 30 on CRIES Scale

Conclusion: The findings of the study suggest that paediatric PTSD is almost identical to adult PTSD, which has significant p value. It is necessary to recognise the initial psychological impact of the pandemic on children and help them receive immediate attention.

Keywords: Covid 19 pandemic, PTSD, CRIES, children's, DSM -5

Introduction:

COVID-19 has impacted the lives of individuals round the world including children and adolescents in an unprecedented manner. Throughout the planet, an important mode of prevention from COVID-19 infection has been isolation and social distancing strategies to guard from the danger of infection. On these grounds, since January 2020, various countries have started implementing regional and national containment measures or lockdowns. In this backdrop one among the principal measures taken during lockdown has been closure of faculties, educational institutes and activity areas. These circumstances which are beyond normal experience causes stress, anxiety and a sense of helplessness altogether.^[1]

It has been indicated that compared to adults, the pandemic may still have increased further adverse consequences on children and adolescents. The nature and extent of impact on this age group depend on many vulnerability factors such as the developmental age, current educational status, having special needs, pre-existing mental health condition,

being economically under privileged and child/ parent being quarantined due to infection or fear of infection.^[1]

Among the overall population, we should always pay special attention to children as they're particularly susceptible to the psychological impact of the outbreak. During the outbreak, children and their parents were confined together at home, and most families stayed socially isolated. As a result, there have been substantial changes in their daily routine and social infrastructure. Given quarantine and isolation have undoubtedly affected many aspects of children and parents lives, the chances of negative outcomes may increase.^[2]

Post-traumatic Stress Disorder (PTSD) develops as a consequence of 1 or more physical or psychological traumatic event, for instance, exposure to natural disasters like earthquakes, fires, floods, hurricanes, tsunamis, war, torture, death threats, car accidents, robbery, plane crashes, diseases with poor prognosis, complicated or traumatic

morning, mistreatment and physical and sexual abuse in childhood.

According to Diagnostic and Statistical Manual of mental disorders (DSM-5; APA, to make a diagnosis of PTSD it is necessary to evaluate the presence of the following criteria: exposure to a traumatic event; re-experimentation symptoms; avoidance symptoms; symptoms of negative alteration of thoughts and emotions; symptoms of hyper activation (arousal)^[4] of these, post traumatic disorder has received the most attention from researchers; it defines a clear aetiology, which has been explained by glucocorticoid stress model. According to this model, excessive stress may result in hypothalamo-pituitary-adrenal axis dysregulation, due to increased secretions of glucocorticoids. Increased binding of glucocorticoids to its receptors may result into impaired neurogenesis, or reversible dendritic retraction.^[3]

Objective of the study -Assessment of suspected covid 19 children for perceived levels of stress during covid 19 outbreak in a tertiary centre

Materials and Methods

Patients of paediatric age group admitted in Hospital as Covid-19 suspects meeting the inclusion and exclusion criteria were chosen.

Sample size –The study encompasses 54 subjects

Research Design- Prospective study

Place of Study-Bowring and Lady Curzon Hospital, Bangalore, Karnataka

Study Duration – 1 month

Inclusion criteria

- Guardian of the child/child consenting to take part in the study
- Any paediatric patient who is screened (suspected covid-19 & asymptomatic)

Exclusion Criteria

- Refuse to give consent

Methodology

Tools for Data Collection

1.) A semi structured interview schedule prepared by the researcher to understand the various socio-demographic characteristics of the respondents.

2. The Children's Impact of Event Scale (CRIES 13):

Developed by Horowitz et al to experience the main phenomenon of re-experiencing the traumatic event and of avoidance of that event and the feelings to which it gave rise.

There are 8 items that are scored on a four point scale

- Not at all – 0
- Rarely -1
- Sometimes – 3
- Often – 5

And three subscales

- Intrusion = sum of the items 1+4+8+9
- Avoidance = sum of the items 2+6+7+10
- Arousal = sum of items 3+5+11+12+13

Procedure for data collection

• This is a follow-up study which was conducted immediately after the lockdown in Karnataka. The data was collected online. Informed consent was obtained orally over phone before proceeding with the study. The questionnaire consisted of demographic variables which included name, age, contact no., address, gender, occupation/class. The questionnaire was shared online via Whatsapp and/or other means. The questionnaire was administered in English language. The Children's Impact of Event Scale (CRIES 13) consisted of Multiple choice questions (MCQs) with 1 best response. At the end of the questionnaire feedback and suggestions were elicited from the respondents (Not at all – 0; Rarely -1; Sometimes – 3; Often – 5). In cases where the patient didn't have a smart phone, he was interviewed over the telephone and the data was collected. Those who were screened were contacted after 1 month to check with any physical and mental health problems over the phone by using the questionnaire.

Statistical Analysis

The Data obtained through this study was analyzed using SPSS 24.0, and there were no missing data among answers of all data included for the analysis. Pre and post status compared using paired t test, frequency distributions for proportions and descriptions statistics for mean median and inter quartile range.

Results

PAIRED T TEST

		N	Mean $\pm$ SD	Mean difference $\pm$ SD	t	P VALUE
Pair 1	INTRUSION PRE	54	0.41 $\pm$ 0.86	-1.52 $\pm$ 2.69	-4.15	<0.001
	INTRUSION POST	54	1.93 $\pm$ 2.75			
Pair 2	AVOIDANCE PRE	54	1.17 $\pm$ 1.29	-0.85 $\pm$ 3.14	-2.00	0.051
	AVOIDANCE POST	54	2.02 $\pm$ 2.99			
Pair 3	AROUSAL PRE	54	1.48 $\pm$ 1.91	-0.37 $\pm$ 3.49	-0.78	0.439
	AROUSAL POST	54	1.85 $\pm$ 2.83			
Pair 4	TOTAL CRIES 13 PRE	54	3.06 $\pm$ 3.78	-2.74 $\pm$ 8.75	-2.30	0.025
	TOTAL CRIES 13 POST	54	5.8 $\pm$ 8.26			

Interpretation -

- On comparison of the mean values of INTRUSION PRE and INTRUSION POST the mean values of INTRUSION POST is higher with a difference of 1.519 which is statistically significant with a p value of <0.001.
- On comparison of the mean values of AVOIDANCE PRE and AVOIDANCE POST the mean values of AVOIDANCE POST is higher with a difference of 0.852 which is statistically not significant with a p value of 0.051.

- On comparison of the mean values of AROUSAL PRE and AROUSAL POST the mean values of AROUSAL POST is higher with a difference of 0.37 which is statistically not significant with a p value of 0.439.
- On comparison of the mean values of TOTAL CRIES 13 PRE and TOTAL CRIES 13 POST the mean values of TOTAL CRIES 13 POST is higher with a difference of 2.741 which is statistically significant with a p value of 0.025

Comparison of the mean values of TOTAL CRIES 13 PRE and TOTAL CRIES 13 POST **Table 1: Age of the Patient**

Statistics		
		Age of the patient(IN YEARS)
N	Valid	54
Mean		11.750
Median		12.000
Std. Deviation		3.8159
Minimum		6.00
Maximum		17.0

Table 2: Gender of the patient

	Gender of the patient	Valid Percent
Female	23	42.6
Male	31	57.4
Total	54	100

Table 3: Informant of the study subjects

	Informant	Valid Percent
Father	24	44.4
Guardian	1	1.9
Mother	21	38.9
Self	8	14.8
Total	54	100

Table 4: Education status of the head of the family

	Education status of the head of the family	Valid Percent
graduate	1	1.9
high school	15	27.8
illiterate	11	20.4
lower primary	17	31.5
post graduate	1	1.9
postgraduate	1	1.9
upper primary	8	14.8
Total	54	100

Table 5: Child's educational status

	Child's educational status	Valid Percent
	1	1.9
attending school	50	92.6
not attending school	1	1.9
pre school	2	3.7
Total	54	100

Table 6: Economic background of the family

	Economic background of the family	Valid Percent
APL	2	3.7
BPL	52	96.3
Total	54	100

Table 7: COVID REPORT STATUS PRE

	COVID REPORT STATUS PRE	Valid Percent
NEGATIVE	10	18.5
POSITIVE	44	81.5
Total	54	100

Table 8: COVID REPORT STATUS POST

	COVID REPORT STATUS POST	Valid Percent
NEGATIVE	54	100

Table 9: Comparison of the mean values of TOTAL CRIES 13 PRE and TOTAL CRIES 13 POST

	N	MEAN±SD	MEDIAN (IQR)	RANGE
Age of the patient (IN YEARS)	54	11.75±3.82	12(9,15)	3.8 to 17
INTRUSION PRE	54	0.41±0.86	0(0,1)	0 to 4
AVOIDANCE PRE	54	1.17±1.29	1(0,2)	0 to 5
AROUSAL PRE	54	1.48±1.91	1(0,2)	0 to 7
TOTAL CRIES 13 PRE	54	3.06±3.78	2(0,4)	0 to 14
INTRUSION POST	54	1.93±2.75	1(0,3)	0 to 14
AVOIDANCE POST	54	2.02±2.99	1.5(0,3)	0 to 17
AROUSAL POST	54	1.85±2.83	1(1,2)	0 to 18
TOTAL CRIES 13 POST	54	5.8±8.26	4(1,8)	0 to 49

The mean age in our study was 11 years, with a total sample size of 54(Male-31; Female-23), with reliable informants to gather information and most children were attending school before lockdown. Only two children scored more than the cut off score in CRIES to have significant stress and to make diagnosis of PTSD.

Discussion

In the midst of the ongoing covid 19 pandemic, this study was conducted to assess the psychological state of children and adolescents in India during the COVID-19 outbreak. Factors that cause the psychological impacts were also explored; data were collected during and after 1 month. Specifically, children experienced significantly higher levels of anxiety but significantly lower levels of depression and PTSD. Moreover, in our study psychological impact on children did not differ across age. More than 92% of the children who participated in the study were all attending schools. In the present study, PTSD has prevalent mean values of TOTAL CRIES 13 PRE and TOTAL CRIES 13 POST the mean values of TOTAL CRIES 13 POST is higher with a difference of 2.741 which is statistically significant with a p value of 0.025 and PTSD restricts children's from living their lives normally and precipitates mental disorders. In particular, COVID-19 pandemic patients are at a moderate risk of PTSD, especially those who have been discharged after a full recovery. Thus, PTSD detection through active inquiry and appropriate subsequent treatment is warranted.

A pandemic might be considered in par with a disasters it consists of the non-routine character that exceeds the local capacity to respond to it and the changes in community, government, individual support and infrastructure, also affecting the region's stability. Besides recruiting many resources from all instances of support, it does not stop other catastrophes from happening, and it even amplifies their effects by the lack of enough response.^[5]

Study done by Shweta Singh et al, revealed Based on the questionnaires completed by the parents, findings reveal that children felt uncertain, fearful and isolated during current times. It was also shown that children experienced

disturbed sleep, nightmares, poor appetite, agitation, inattention and separation related anxiety. COVID-19 infection is expressed differently in children and adolescents. Yet the incidents of infection in the minors have been reported worldwide, which result in children being quarantined. Moreover, in many cases a single parent or both the parents are infected and quarantined. In either condition children are separated from their parents. It is found that separation from the primary caregivers can make a child more vulnerable and can pose a threat to the child's mental health (Cooper, 2020; Jiao et al., 2020; Liu et al., 2020). The children may develop feelings of sadness, anxiety, fear of death, fear of parents death and fear of being isolated in the hospital which may have a very detrimental effect on their psychological development (APA, 2020; CDC, 2019; Dalton et al., 2020). Children have emotionally pentup feelings of distress which may turn inwards into emotional fear or outwards towards acting out behaviour (Liu et al., 2020). They might feel separated or alone as they have limited knowledge and level of maturity to understand the implications of the current pandemic situation in their limited world.^[1]

However, children from all developmental stages had high rates of depression, anxiety, and post-traumatic symptoms as expected in the aftermath of any disaster.^[5] Companionship is essential for children's normal psychological development and wellbeing. Separation from caregivers pushes children into a state of crisis and might increase the risk of psychiatric disorders. However, children who are separated from their caregivers upon testing positive with symptomatic and non-symptomatic, made hospital admission for 7 days and children who are quarantined at home with or without their parents or relatives for 14 days after discharge require special attention^[6].

Loneliness is often described as the state of being without any company or in isolation from the community or society and this is experienced by children in hospital and after discharge. It is considered to be a dark and miserable feeling, a risk factor for many mental disorders like depression, anxiety, adjustment disorder, chronic stress,

insomnia^[7]. The impact of media reporting and public sentiments may have a strong influence on the children and the most common events witnessing fearful scenes on TV followed by witnessing death due to corona complications all have major impact on children^[8].

According to a report from the World Health Organization, during epidemic outbreaks individuals are likely to experience a variety of acute psychological reactions as a consequence to their exposure. Meanwhile, witnessing the traumatic course of the infection in others can result in fear and anxiety about becoming ill or dying themselves. However, few studies have examined the association between engagement with traditional and new media and acute psychological consequences among populations who are uncertain whether they will become infected and who are also exposed to the disease indirectly via the media. The negative effect was found in viewing content on reports from hospitals (e.g., lack of medical supplies, patient cannot be admitted to hospital), which was associated with more negative affect and depressive symptoms, as well as information related to COVID-19 outbreak itself (e.g., number of cases of infection and deaths) which was associated with more negative affect and reduced positive affect viewing content on people being heroic and speeches from experts and the authorities, and more positive affect. Content on disease knowledge and prevention was associated with lower depressive symptoms. These findings suggest that media content that includes information useful for self-protection may be helpful to people during an epidemic outbreak. This may enhance active coping and prevention behaviours which can install a sense of control^[9].

Conclusion

In summary, the findings reviewed here suggest that paediatric PTSD shows a similarity to adult PTSD. Without early intervention, childhood adversity can have risk for developing mental and physical health problems including PTSD and depression. Developmental period is marked by increased plasticity and heightened responsiveness to early resilience based interventions^[10].

Distancing from social media is going to be beneficial, as during the time of pandemic it can contribute to 'infodemic' causing information overload. COVID-19 by all means may be a 'digital epidemic' where the related statistics spread faster than the virus itself. Only relevant and updated information about the situation outside helps relieve anxiety during isolation (Hyvärinen & Vos, 2016). It is vital that the virus doesn't invade us 'psychologically' which can last much beyond the resolution of this pandemic. As psychological state professionals, we'd like to be sensitive to the personalized needs of these in quarantine and cater to them. Their personal and psychological needs are to be adhered to and digital communication needs to be maintained with their loved ones^[7,11]

Limitation

Certain limitations of this study can be recognized. Because of the limited sample size these findings may not represent the entire youth population. Therefore, a larger sample size might be needed. Finally, other variables affecting youth mental health with respect to COVID-19 should be examined.

Recommendations

With the aim to extend children's awareness about COVID 19, it's crucial for folks to speak with young children in an age appropriate manner by using simple terminologies about COVID-19. Children need to tend fact based information with the help of presentations and video material provided by authorized international organizations like WHO and UNICEF or government resources which have been tailor made especially for children. To alleviate the anxiety of youngsters regarding the present uncertain situation (Wang et al., 2020), children's exposure to news should be limited and be through fact based neutral news channel. There is a need for 'telemental health compatibility' in place of in-person assessments and interventions^[1].

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