

A cross-sectional study on Emotional Status and Behavioral Changes of school going children during the COVID-19 outbreak

S. Prasanth Kumar¹, Akhila.K¹, B. Kiran Mai²

¹Final Year Postgraduate, Department of Community Medicine, Osmania Medical College, Hyderabad, Telangana

²Professor, Department of Community Medicine, Osmania Medical College

Corresponding author: Dr. B. Kiran Mai

Email – andasukiranmai@gmail.com

ABSTRACT

Background: The current threat of Covid-19 pandemic is not only disrupting the economy but also creating psychological impact on the people. As a measure to control the spread, India imposed lockdown on various occasions. During this period only essential services were operational, while educational institutions remain closed. Due to social distance norms and restricted recreational activities, children are more prone to behavioural changes and it can also cause anxiety and depression. The current study focusses upon this aspect among school going children due to Covid-19.

Methodology: A cross sectional study was done on school going children, currently restricted to home. A semi-structured questionnaire which included (RCADS-25 scale for depression and anxiety) was administered to the parents through online platform. Bivariate logistic regression was used to test the significance of association between changes Impact of covid-19 and emotional status of Children and also between behavioural changes in children and presence of at least one sibling.

Results: Majority of respondents were males (59%) and mean age was 9.9yrs. Majority (47.2%) belong to Middle school. Mean score of RCADS-25 scale was 15.61 ± 9.4 for the study population. Worry was seen in 67.3% and frustration was seen in 32.4% for conduction of online classes. Irritability was seen 31.91% and restriction of outdoor activities caused loss of temper in 56.9% of the study population. Insomnia was often seen in 20% while 50% had sadness/empty feeling at some point of time. Lack of confidence was seen in 52.7% children. Majority (69.5%) were scared to sleep alone at night. Chi-square test for significance showed significant association between Parent's behaviour and mood changes in Children (O.R- 2.43(1.1-5.33 - 95%C. I) $p=0.04$). Bivariate logistic regression showed significant association between Impact of covid-19 and emotional status of Children (O.R=2.967,95% C.I(1.582-5.564), $p=0.001$) and also between behavioural changes during pandemic and presence of at least one sibling(O.R =0.578,95% C.I 0.345-0.971, $p=0.038$).

Conclusion: The behavioural changes of children due to Covid -19 is evident and necessary measures like counselling the parents are necessary.

Keywords: Emotional, Behavioural changes, children, school going children, COVID-19.

(Paper received – 26th June 2021, Peer review completed – 15th August 2021)

(Accepted – 8th September 2021, Published – 5th January 2022)

INTRODUCTION

In the world, Children constitute 28% (2.2 billion) of the world's population. 16% were aged between 10 to 19 years [1]. The current threat of Covid-19 pandemic was not only disrupting the economy but also creating psychological impact on the people. As a measure to control the spread, India imposed lockdown on 24th March, 2020. During this period only essential services were operational, while educational institutions remain closed.

The containment measures like school and activity centres closures for long periods together expose the children and youth to the debilitating effects on educational, psychological, and developmental attainment as they experience loneliness, anxiety, and uncertainty. Compulsive use of internet gaming and social media puts them at higher risk. Children and adolescents with mental health conditions are not used to variation in the environment. Hence there could be an exacerbation in symptoms and behavioural problems [1]. It has been indicated that compared to adults, this pandemic may continue to have increased long term adverse consequences on children and adolescents [2]. Far less is known about how young children have coped during lockdown, though evidence is rapidly emerging for adolescents. A large, longitudinal study of 13–14 year old's in the UK reported a mixed pattern of changes in well-being, depression and anxiety in April/May 2020 compared with October 2019 [3].

Children's mental health may depend on a variety of factors. Loneliness in children is associated with subsequent mental health problems, particularly depression [4]. Using social media may also mitigate the impacts of physical distancing [4]. Reduced access to play and activities for young people may impair their mood homeostasis [5].

Self-reported well-being and anxiety slightly improved during the lockdown compared with before. Due to social distance norms and restricted recreational activities, children are more prone to behavioural changes, and it can also alter their mental health status in the form of anxiety and depression. Quarantine and self-isolation can cause a negative impact on one's mental health. There has been increased frustration among the children due to restrictions of outdoor activities and due to fear of losing loved ones. Many Children were being orphaned as well impacting their overall mental health. A review published mentioned that the separation from loved ones, loss of freedom, boredom, and uncertainty can cause a deterioration in an individual's mental health status [6]. The current study focusses upon this aspect among school going children due to Covid-19. The aims of the study is to assess the emotional impact of Covid -19 among school going children and to identify the behavioural changes among the study subjects.

METHODOLOGY

A cross sectional study was done on school going children, currently restricted to home. Informed consent was taken from the parents. A semi-structured questionnaire which included the Revised Children Anxiety and Depression Scale-25 (RCADS-25) that was administered to the parents through online platform.

Scale used

Revised Children Anxiety and Depression Scale-25 (RCADS-25): This scale was used to assess the anxiety and depression in children. In the RCADS 25, 15 items assessed anxiety and 10 items assessed depression. Respondents were asked to indicate how often each item applied to them according to a 4-point Likert scale (0 = never, 1 = sometimes, 2 = often, or 3 = always). The total score for each item included in the subscale was used to compute a score. A T score of 65 or higher indicated the borderline clinical threshold, whereas a T score of 70 or higher indicated a child above the clinical threshold. A T score below 65 indicated a normal case.

STATISTICAL ANALYSIS

The data thus collected from 110 respondents was entered in excel and analysed using epi info 7.2.2.6. Chi-Square test was conducted to assess the relation between parent's mood and Children behaviour and p-value less than 0.05 was considered significant. Bivariate logistic regression was used to find the association between Impact of covid-19 and emotional status of Children. Logistic regression was also used to see the association between behavioural changes in children and presence of at least one sibling.

RESULTS AND DISCUSSION

Out of 110 respondents, 59% were males and 41% were females. The mean age was 9.9 years with majority of the children belonging to 5-10 age group.

Table 1: Literacy Status of the study population

Educational level	N (%)
Pre-primary	4 (3.6%)
Primary	38 (34.6%)
Middle School	52(47.2%)
Secondary	16(14.6%)

Majority (47.2%) belong to middle school, 34.6% belongs to primary school, 14.6% to Secondary school and 3.6% belongs to preschool (Table 1).

Table 2: Psychological conditions studied in Children

Parameter	(%)
Worried about the outbreak being out of control	67.3%
Frustrated of online classes	32.4%
Children effected by parents behaviour/mood with family/children	55%
Irritability	40.9%
Frustration for not playing outdoors	56.9%
Insomnia	30%
Feeling Sad/Empty	59.1%
Frequent mood changes	59.1%
Poor Appetite	26%
Nothing seems fun anymore	48.2%
Lack of Confidence	52.7%
Scared to sleep alone at night	69.5%

Mean score of RCADS-25 was 15.61 ± 9.4 , with low severity of anxiety and depression. Worry about outbreak being out of control was seen in 67.3% of the children. 32.4% were frustrated of online classes. Irritability of some sort was seen in 31.91% of study subjects. While frustration for not playing outdoors due to restrictions and social distance norms was seen in 56.9% of the study group (Table 2).

Insomnia was often seen in 20% of the respondents, sometimes in 8% and always present in 2% of the study subjects. Sadness/empty feeling was seen always in 1.8% of the respondents and sometimes in 50% of the Children. 59.09% of the children were having frequent mood changes and 26% of the respondents were having poor appetite. The worry of something awful might happen was seen in 34% of the children. Nothing seems fun anymore for 48.2% of the children. Lack of confidence was seen in 52.7% children. Majority (69.5%) were scared to sleep alone at night. (Table 2)

Table 3: Impact of covid on Parent's mood/behavioural changes on Children's mental health

Mood/Behavioural Changes of parents	Effect on Children's Mental health status		
	Present	Absent	TOTAL
Present	42	18	60
Absent	24	25	49
	66	43	109

[Odds Ratio- 2.43 (1.1-5.33), Chi-Square – 4.14, p-Value – 0.04]

55% were affected by parent’s behaviour/mood with family/children with Odds of 2.43(95% C.I 1.1-5.33, p=0.04). the association was statistically significant (Table 3)

Table 4. Bi-variate logistic regression showing association between Impact of covid-19 and emotional status of Children

	S.E.	df	Sig.	Exp(B)	95% C.I. for EXP	
					Lower	Upper
Emotional Status (Frequent mood swings)	.321	1	.001	2.967	1.582	5.564
Constant	.248	1	.002	.458		

[OR=2.967, 95% CI (1.582-5.564, p<0.001)]

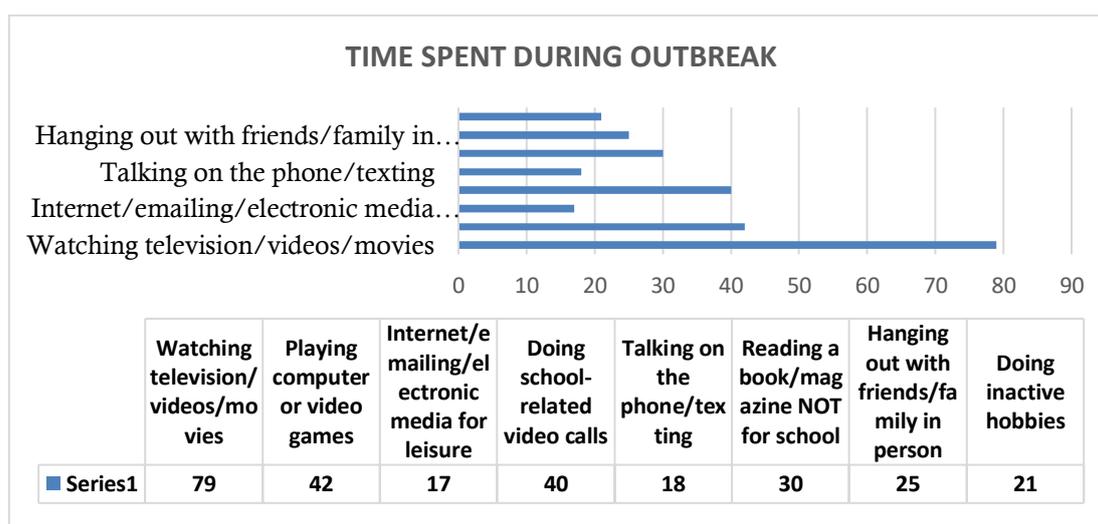
Bivariate logistic regression was used to find the association between Impact of covid-19 and emotional status of Children (O.R=2.967,95% C.I(1.582-5.564), p=0.001. Significant association was observed between the two variables.(Table 4)

Table 5. Logistic regression showing association between behavioural changes and presence of at least one sibling at home.

	S.E.	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Presence of at least 1 sibling	.264	1	.038	.578	.345	.971

Logistic regression also revealed significant association between behavioural changes during pandemic and presence of at least one sibling (O.R =0.578,95% C.I 0.345-0.971,p=0.038).Presence of at least one sibling had positive impact on the behavioural changes (Table 5).

Fig 2: Time spent by the study population during outbreak



Majority of the time was in watching Television/Internet/Videos(71.8%), while 38.2% were engaged in playing Computer games and 36.3% in doing school related video calls. Some (27.3%) spent their time in reading books.(Fig 2). Most of the children had Worry and sadness sometimes/often. Although sleep disturbances and improper appetite was observed, it doesn’t had much impact on majority of the study population. (Table.6)

Table 6. The general situations about children encountered during COVID-19 pandemic

Question	Option	Responses n (%)
My child worries about things	None	28 (25.5)
	Sometimes	71 (64.5)
	Often	9 (8.2)
	Always	2 (1.8)
My child feels sad or empty	None	42 (38.2)
	Sometimes	57 (51.8)
	Often	9 (8.2)
	Always	2 (1.8)
My child worries about being away from me	None	32 (29.1)
	Sometimes	44 (40)
	Often	13 (11.8)
	Always	21 (19.1)
My child has trouble sleeping	None	74 (67.3)
	Sometimes	24 (21.8)
	Often	9 (8.2)
	Always	3 (2.7)
My child has problems with his/her appetite	None	79 (71.8)
	Sometimes	21 (19.1)
	Often	7 (6.4)
	Always	3 (2.7)

CONCLUSIONS

The home confinement of children and adolescents is associated with uncertainty and anxiety can disrupt their education, physical activities, and opportunities for socialization. Absence of regular schooling can cause boredom and lack of creative thinking in various activities. Hence, engaging children in indoor playful activities, spending time with them can create a major impact on their emotional status. Parents should be attentive to their children and understand their needs and take necessary action to alleviate anxiety and inculcate good behaviour among them.

There was significant correlation between parents' mood /behaviour and child's mental health and hence counselling to parents is necessary during this crisis. Teachers should make the online classes interesting and more interactive by including academic and non-academic activities, so the students can participate actively and enthusiastically. They should also keep check of behavioural changes among the children

Increased screening time in watching TV/Videos on internet can lead to eye disorders and behavioural changes like instant loss of temper, irritability, and frequent mood changes. The constraint of movement imposed on them can have a long-term negative effect on their overall psychological well-being. They should be made aware of the situation and counselling by eminent psychologists should be employed in online classes as well, to improve their understanding and cope up with their emotional status.

Children have emotionally pent-up feelings of distress which may turn inwards into emotional fear or outwards towards acting out behaviour. This can be gradually decreased by proper intervention of the parents and teachers with whom would they spend majority of their time during this Pandemic situation. Wherever necessary tele-consultation with psychiatrists and Paediatricians is necessary to keep check of their mental as well as physical health.

Finally, the Government and Public health specialists should come up with policies to tackle the emotional and behavioural changes among Children and adolescents as this Covid-19 pandemic has a devastating long-term effect on their mental health.

REFERENCES

1. Singh S, Roy D, Sinha K, Parveen S, Sharma G, Joshi G. Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Res* 2020;293:113429.
2. Shen K, Yang Y, Wang T, Zhao D, Jiang Y, Jin R, et al. Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement. *World J Pediatr* 2020;16(3):223–31.
3. Young People's Mental Health during the COVID-19 Pandemic — University of Bristol [Internet]. [cited 2021 Jun 20]; Available from: <https://research-information.bris.ac.uk/en/publications/young-peoples-mental-health-during-the-covid-19-pandemic>
4. Orben A, Tomova L, Blakemore SJ. The effects of social deprivation on adolescent development and mental health. *Lancet Child Adolesc Health* 2020;4(8):634-40.
5. Loades ME, Chatburn E, Higson-Sweeney N, Reynolds S, Shafran R, Brigden A, Linney C, McManus MN, Borwick C, Crawley E. Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *J Am Acad Child Adolesc Psychiatry* 2020;59(11):1218-39.
6. Javed B, Sarwer A, Soto EB, Mashwani Z. The coronavirus (COVID-19) pandemic's impact on mental health. *Int J Health Plann Manage* 2020.
7. Morgül E, Kallitsoglou A, Essau CA. Psychological effects of the COVID-19 lockdown on children and families in the UK. *Revista de Psicología Clínica con Niños y Adolescentes* 2020;7(3):42-8.
8. Bignardi G, Dalmaijer ES, Anwyl-Irvine AL, Smith TA, Siugzdaite R, Uh S, Astle DE. Longitudinal increases in childhood depression symptoms during the COVID-19 lockdown. *Arch Dis Childhood* 2021;106(8):791-7.
9. Morelli M, Cattelino E, Baiocco R, Trumello C, Babore A, Candelori C, et al. Parents and Children During the COVID-19 Lockdown: The Influence of Parenting Distress and Parenting Self-Efficacy on Children's Emotional Well-Being. *Front Psychol* 2020;11.
10. Viner RM, Russell SJ, Croker H, Packer J, Ward J, Stansfield C, et al. School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *Lancet Child Adolesc Health* 2020;4(5):397–404.
11. Jiao WY, Wang LN, Liu J, Fang SF, Jiao FY, Pettoello-Mantovani M, Somekh E. Behavioral and emotional disorders in children during the COVID-19 epidemic. *J Pediatrics* 2020;221:264.
12. News EEEE is a national reporter for N, Detroit based in. An overwhelming toll: What America's children have lost during the pandemic [Internet]. NBC News [cited 2021 Jun 19]; Available from: <https://www.nbcnews.com/news/education/covid-having-devastating-impact-children-vaccine-won-t-fix-everything-n1251172>
13. Bruni O, Malorgio E, Doria M, Finotti E, Spruyt K, Melegari MG, Villa MP, Ferri R. Changes in sleep patterns and disturbances in children and adolescents in Italy during the Covid-19 outbreak. *Sleep Med* 2021;Feb 9.
14. Dalton L, Rapa E, Stein A. Protecting the psychological health of children through effective communication about COVID-19. *Lancet Child Adolesc Health* 2020;4(5):346–7.
15. The effect of the COVID-19 outbreak on children's behavior and parents' mental health in China: A research study | Research Square [Internet]. [cited 2021 Jun 19]; Available from: <https://www.researchsquare.com/article/rs-22686/v1>

Acknowledgements – Nil

Conflict of Interest – Nil

Funding – Nil