



Effect Of Covid-19 Pandemic On Childhood Behavioural & Developmental Disorders Amongst Children (2-14 Years) Presenting To A Tertiary Care Hospital In Bhubaneswar

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Abstract

Background: During COVID19 pandemic, children were kept confined to the four walls of a house restraining them from school activities, learning, physical play & social interaction with peers. This abrupt change in environment was likely to result in major behavioural & developmental disturbances in children.

Objective: To study the impact of COVID19 pandemic on prevalence & spectrum of behavioural & developmental disorders in children.

Method: This study was conducted amongst paediatric population, 2-14 yrs age group attending OPD at Hi-Tech Medical College & Hospital, Bhubaneswar during COVID-19 pandemic (2020-21). This data was compared with hospital based data collected in 2019. Then, data was analyzed via SPSS software version 2.0.

Study Design: Hospital based prospective study was conducted at Hi-Tech Medical College & Hospital from April 2020 to December 2021.

Results: Prevalence of behavioural & developmental disorders in 2020 is 2.5% & in 2021 is 2.8% which is greater than 1.8% in 2019. Similarly, prevalence of Autism amongst the developmental disorders increased from 7.2% in 2019 to 14.7% in 2020 & 16.2% in 2021. Similar trend is also noticed for ADHD (spiked from 4.4% in 2019 to 8.2% in 2020 & 13% in 2021). Interestingly, there is a decrease in prevalence of somatoform disorders between 2019 (28%) to 2020 (25%) & 2021 (21%).

Conclusion: Our study shows a significant rise in behavioural & developmental disorders, during COVID 19 pandemic which may be due to rampant use of electronic gadgets resulting in lack of social interaction. A decline in the prevalence of somatoform disorders was noted which may be ascribed to optimal parental attention. This emphasizes the active role that pediatricians & family members need to play towards early institution of appropriate preventive measures during any future pandemic to ameliorate such similar situation.

Keywords: COVID 19, Developmental and behavioural disorders , Prevalence, Autism, ADHD

Introduction

Corona virus disease 2019 (COVID-19) was first identified in Wuhan province of China in December 2019 & then it spread like wildfire. The first case of COVID-19 was detected in India on January 27, 2020. In view of extensive outbreak of COVID-19 disease, Govt of India declared nationwide lockdown on evening of 24 March 2020 for 21 days which later

extended to 69 days. The second wave of COVID-19 also peaked during April-May 2021. This resulted in shutdown of schools for almost 2 yrs which led the children to remain in prolonged confinement within four walls of house. This strategy played the role of double edged sword where on one hand, it was implemented to lessen direct contact between individuals to avoid further spread of Covid19

pandemic, on the otherhand, it curbed down socialisation of pupils deteriorating developmental aspect of adolescent health.

During this period, effect of distance learning upon behavioural & developmental health of adolescents has been increasing concern. Another factor ,which might contribute to evolution of mental health was the focus always on detecting & management of active COVID-19 infection & post COVID complications (like MIS-C) bu there was a silent outburst of behavioural & developmental disorders which has yet been unrecognized. This phenomenon resulted in development of short term & long term psychosocial health implication on children.This study aims to assess the impact of COVID-19 pandemic on prevalence & pattern of behavioural & developmental disorders amongst children (2-14 yrs old) in a tertiary care hospital in Bhubaneswar.

Materials & Methods

This hospital based prospective study was conducted amongst individual of age group (2-14 yrs) attending OPD in Dept of Paediatrics in Hi-Tech Medical College & Hospital, Bhubaneswar during our study period from April 2020-December 2021.This data was compared with hospital based data collected in 2019.

Inclusion criteria: (1) This study includes all children attending OPD in our hospital with recent change in behaviour after lockdown period . (2) Parents of those children giving consent for the study.

Exclusion criteria: (1)Children who were previously diagnosed with any behavioural & developmental disorders. (2)Children suffering from any acute and/or chronic systemic illnesses. (3)Parents not giving consent for the study.

Detailed history regarding age, sex, demographic data, perinatal history (which include antenatal, natal & postnatal events), any systemic illness, detailed developmental history,any recent change in behaviour as noticed by parents (like any changes in habit , speech, sleep ,eating behaviour), medication history were collected from both patients & parents through specific questionnaire. As per DSM-V, these behavioural changes were categorized into specific disorders. After such categorization ,all collected data were tabulated into various tables , graphs & diagrams from which prevalence of any mental health problems with its specific trend over the years since the beginning of lockdown would be assessed & compared with data collected in 2019. Data was analyzed using SPSS software version 27.

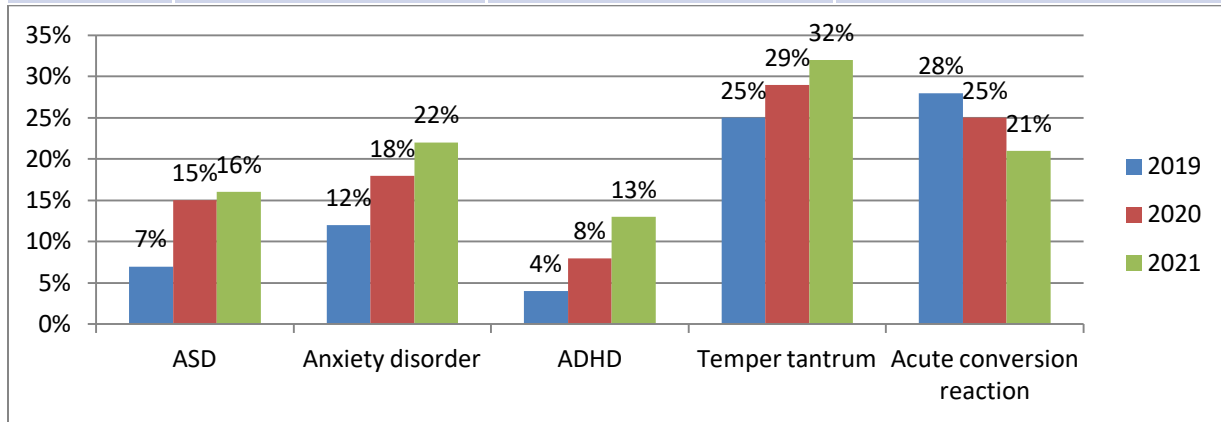
Result

Our study indicates that prevalence of behavioural & developmental disorder over the years in 2019, 2020, 2021 are 1.8%,2.5%, 2.8% respectively. We had encountered 14 such disease from which majority of psychosocial disorder are acute conversion reaction, autism spectrum disorder, anxiety disorder, ADHD & temper tantrum. Temper tantrum was noticed predominantly in those children;prevalence of temper tantrum is 25%,28%,32% in 2019,2020,2021 respectively. Similar trend was also seen in case of autism spectrum disorder (12.2% in 2019,18.2% in 2020,22% in 2021) & in ADHD (4.4%,8.2%,13% in 2019,2020,2021 respectively)but different trend of acute conversion reaction was observed as prevalence of it in 2019-21 are 28%, 25% & 21%.All other behavioural & developmental disorders were described in table no 2.0 in which it showed varied pattern of prevalence over the years .

Figure 1: Trend of specific behavioural & developmental disorders over the years

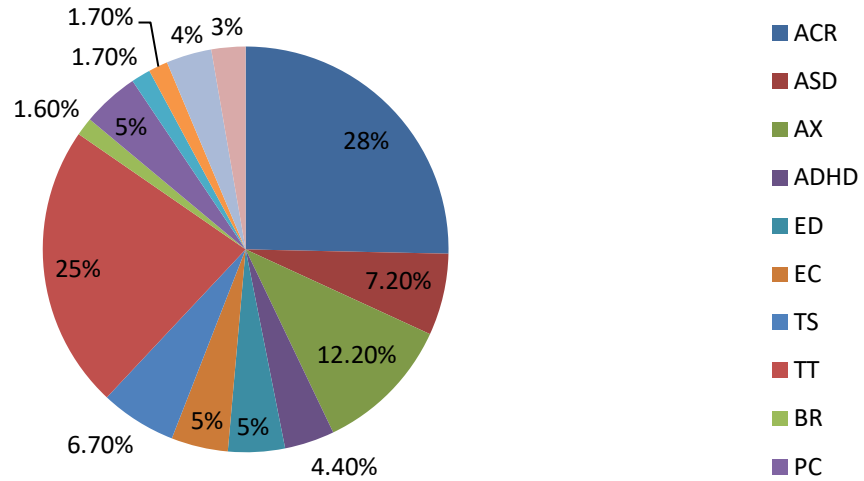
YEAR	OPD PATIENTS	NO OF BEHAVIOURAL & DEVELOPMENTAL DISORDER	PREVALENCE
2019	9468	180	1.8%

2020	5652	145	2.5%
2021	8050	225	2.8%

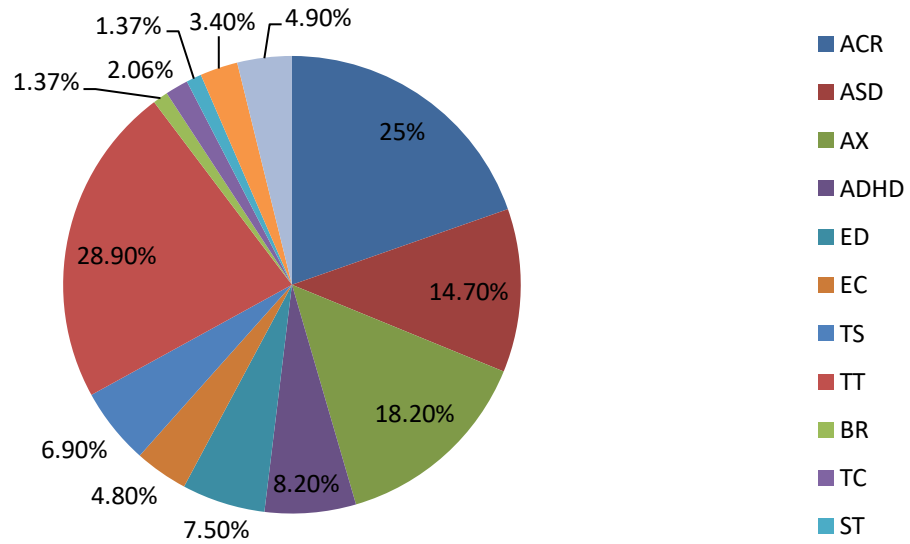


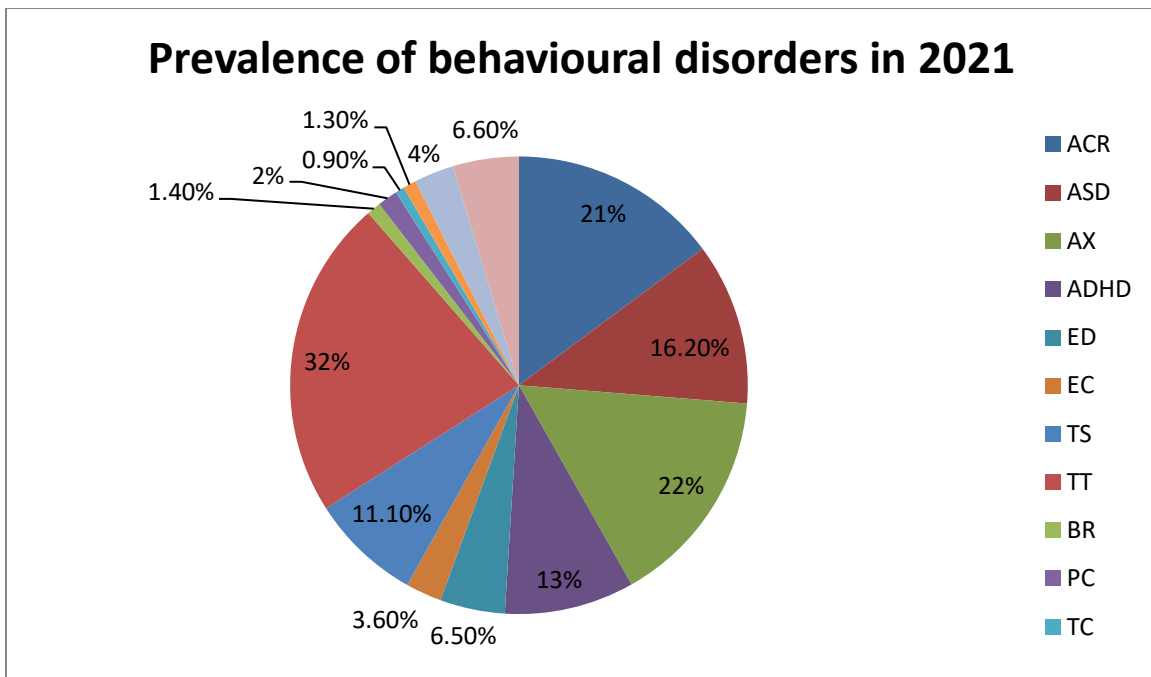
SI NO	BEHAVIOURAL DISORDERS	2019	2020	2021
1	ACUTE CONVERSION REACTION	50(28%)	36(25%)	48(21%)
2	AUTISM SPECTRUM DISORDER	13(7.2%)	20(14.7%)	36(16.2%)
3	ANXIETY DISORDER	22(12.2%)	25(18.2%)	50(22%)
4	ATTENTION DEFICIT HYPERACTIVITY SYNDROME	8(4.4%)	12(8.2%)	28(13%)
5	EATING DISORDER	9(5%)	11(7.5%)	14(6.5%)
6	ENCOPRESIS	9(5%)	6(4.8%)	8(3.6%)
7	THUMB SUCKING	11(6.7%)	10(6.9%)	25(11.1%)
8	TEMPER TANTRUM	45(25%)	42(28.9%)	72(32%)
9	BRUXISM	3(1.6%)	2(1.37%)	3(1.4%)
10	PICA	9(5%)	3(2.06%)	4(2%)
11	TICS	2(1.7%)	2(1.37%)	2(0.9%)
12	STUTTERING	2(1.7%)	2(1.37%)	3(1.3%)
13	DYSLEXIA	7(4%)	5(3.4%)	8(4%)
14	INSOMNIA	4(3%)	7(4.9%)	15(6.6%)

PREVALENCE OF BEHAVIOURAL DISORDERS IN 2019



Prevalence of behavioural disorder in 2020





ACR-ACUTE CONVERSION REACTION,ASD-AUTISM SPECTRUM DISORDER,AX-ANXIETY DISORDER,ADHD-ATTENTION DEFICIT HYPERACTIVITY SYNDROME,ED-EATING DISORDER,EC-ENCOPRESIS,TS-THUMB SUCKING,TT-TEMPER TANTRUM,BR-BRUXISM,PC-PICA,TC-TICS,ST-STUTTERING

Discussion

This study was conducted amongst pediatric population attending OPD in Hi-Tech Medical college & Hospital, Bhubaneswar during COVID-19 pandemic period & compared with data collected in 2019. Our study demonstrate that there was significant rise in prevalence of behavioural & developmental disorders over the years since advent of lockdown which is supported by the study conducted by Jiabao chai et al [1] in 2021. There is significant rise noted in behavioural disorders like temper tantrum due to lack of social interaction & compulsive confinement within four walls of a house.

Similar trend is also observed in anxiety & stress disorder which might be due to increased screen time & abrupt change in environment where children are less socialized with decreased physical activity. This evidence is also supported by the systematic review study conducted by Suman roy ,Vishwani Goswami [2] who conclude that pooled prevalence of anxiety disorder & stress disorder during COVID19 pandemic was 34.5%,51.3% respectively in Indian scenario. Rampant utilization of electronic gadgets, due to compulsive restraining in four walls of a house, might play as contributing factor for

development of behavioural disorder especially Autism spectrum disorder & ADHD.

Interestingly, in our study, we noticed that there was significant decline in somatoform disorder which might be due to optimal parental attention during COVID19 pandemic period. The children have ample amount of time to be spent with their family members with whom they can share emotional aspect of life. As a result ,prevalence of acute conversion reaction & other somatoform disorders decreased.

Conclusion

Our study revealed that there was significant rise in trend of behavioural & developmental disorder since the implementation of lockdown due to COVID-19 pandemic. Specifically prevalence of temper tantrum, anxiety , stress disorder, autism spectrum disorder & ADHD spiked during COVID-19 period than precovid era which might be due to augmented use of electronic gadgets, reduced socialization with peers, abrupt change in environment because of compulsive confinement within four walls of a house . Ironically, we also observed decreasing trend of acute conversion reaction & somatoform disorder due to increase in family time in children.

COVID pandemic is here to stay. Our study is only tip of iceberg. Behavioural & developmental health are often neglected during any pandemic period for which periodic surveillance is necessary for early detection so that appropriate preventive strategies can be implemented.

Preventive measures should be accomplished by every individual of our society. Parents must be made aware about such uncertain future COVID pandemic situation where they must teach their children about preventive measures to follow during COVID period, restrict screen time, value peer support system & to make them involved in creative pursuits. Promotion of mental health & prosocial behavior should be undertaken by school teacher. Pediatrician must be well equipped in order to identify physical manifestation of stress & to manage it accordingly. Early institution of appropriate preventive measure by the family members, school teachers & pediatricians (as a TEAM) will avert such a similar situation in future pandemic.

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