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RESEARCH ARTICLE

DON'T BE A DOODAD, THINGUMMY…BE A WISE DADDY AND MUMMY!! VIRTUAL AUTISM: A REVIEW

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ABSTRACT

Virtual autism is a neuro-psychiatric behaviour disorder generated due to excessive screen exposure. Its symptoms are analogous to classic autism; hence, it is called virtual autism. Psychic, motor, sensory, affective and psychosocial stimulation is absent due to improper development of the neurological system. Virtual autism it is not about the destruction of neurological links, but about re-edification of these links, due to their inadequate stimulation. However, the brain of a child with virtual autism can be restored back to normal by taking appropriate precautionary measures; which is unlikely in classic autism.

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INTRODUCTION

We are living in tech savvy digital era. Smart gadgets bolster our every need so we solely depend upon them. The world in which we live in is called "*The Information Society"*; which is in constant change with everything it involves. This steady change influences our day-to-day existence (1). The education is also predominating the informative aspect in the detriment of the formative one. The introduction of computer technologies in the school environment has elevated the formation of algorithmic rational. Reckoning the impacts of the virtual environment on children, there are both positive and negative facets. Nowadays, the immediate generation is over indulged on screens as compared to the earlier one. Also, COVID-19 has doled out a drastic increase in blue light exposure, which has stunned convivial development of a child. Association between autism-like symptoms and screen exposure has been proven in studies. "Autism spectrum disorder (ASD) is a neurological and developmental disorder that affects how people interact with others, communicate, learn, and behave.

It can be diagnosed at any age, though it is recounted as a "developmental disorder" because symptoms usually appear in the first 2 years of life. "Children with ASD typically have difficulty in communicating and interacting with others or understanding social cues. They have very narrow interests and spend hours doing repetitive tasks. The autistic child lives in his own world, isolated from his peers (2). "According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) by the American Psychiatric Association, people with ASD often have difficulty with communication and interaction with other people, restricted interests and repetitive behavior symptoms that affect their ability to function."(2).In the case of children who are considered autistic because of watching excessive screen media, proper development of the neurological system, due to lack of psychic, motor, sensory, affective and psychosocial stimulation is absent. Thereupon, virtual autism it is not about the destruction of neurological links, but about re-edification of these links, due to inadequate stimulation (1).

Classic autism is also known as typical autism and virtual autism is also known as high-functioning autism (3), screen generated neuro-psychiatric behaviour disorder.

HISTORY: The term Virtual Autism was first coined in *1970s* by *Dr Marius Zamfir*, a Romanian clinical psychologist. A Psychiatrist gathered the activity logs of a children's hospital, where rise in autism among all admitted patients was observed. He founded that these children spent more than 4 hours per day on screen media. Dr. Zamfir stated, *"I called it autism because it has the specific symptoms of children with autism, perfectly identical symptoms"*(1).Today in Romania, treatment of autism by screen withdrawal is considered routine and has public support (4).

SYMPTOMS: Over dependency of the child on screen media is the earliest alarming factor for the parents. The child will show reticence for any other activities, lack of social reciprocity will be seen resulting in dwindled cognitive ability and lessened social interaction. Echolalia, cyber-sickness (nausea, vomiting, headache, drowsiness, loss of balance, altered eye-hand coordination), mood swings, disruptive behavior, sensory aberrations can be noticed. Disturbance in sleep pattern, language and speech disablement, incompetence to concentrate and focus, reduced eye contact, stereotyped repetitive behavior, insistence on monotony is observed. Child will not be indulged in imaginative plays as can be seen in other children of his/her age group (5).

SIMILARITIES BETWEEN CLASSIC AUTISM AND VIRTUAL AUTISM: Repetitive behaviour is adapted to manage the sensory overload; struggle in deciphering social cues, encountering challenges in maintaining social relationships and conversations; difficulty in shifting from one activity to the other; individuals may be hyposensitive or hypersensitive to certain sensory inputs (3).

DIFFERENCES BETWEEN CLASSIC AUTISM AND VIRTUAL AUTISM: Both autisms share certain similarities but they also have typical differences that marks them apart. Recognising the differences between these two helps in providing the appropriate interventions at right time. Virtual autism can be diagnosed in any age while classic autism is diagnosed in early years of life. In virtual autism there is marked repetition of certain movements or actions, while in classic autism repetition of certain words or phrases is seen. Speech difficulty is seen in virtual autism, while there is delay or difficulty in spoken language in classic autism. Individuals do not want social reciprocity and pick isolation invirtual autism, while in classic autism there is yearning for social communication and interaction but individuals seek difficulty in understanding social cues. Although, sensory aberrations are seen in both forms of autism, but in virtual autism the sensitivities are stern for certain sensory inputs (3).

PREVENTION: Parents are the only one who can stop their child from acquiring virtual autism. Here are some edicts (do's) and evade (don'ts) for its prevention. Do not make the child owner of his/her personal digital gadget at a very young age. Talk, read, play and spend some time every day with the child as much as possible. Children learn what they observe; so, the use of screens should be avoided or limited whenever they are around. Indulge him/her in some outdoor and indoor exercises or activities. Do not let the child beover indulged into the screen media. Establish rules for screen time exposure. Always appreciate or give rewards whenever the child abides by the allotted screen time (6). It has been observed that brain development of a child with autism can be restored back to normal and in one month the symptoms wholly disappeared by withdrawal of screen (4).

CONCLUSION

Autism is named as a *"spectrum"* disorder as there are extensive variations in the stringency and types of manifestations endured by the people(2). It was concluded by Hattar *et al*. in 2002 that photo pigment melanopsin is expressed by the ipRGCs or intrinsically photosensitive retinal ganglion cells. Multiple brain regions, limbic regions are distributed by these ipRGCs to regulate the sleep, mood, cognitive functions and circadian rhythms (7).Christakis *et al*. in 2004 proposed, infants of 1 to 3 years of age who watched more TV were more likely to develop attention problems(8).In 2008 Chonchaiya *et al*. founded, language delays were seen six times more in children who started watching TV before the age of 12 months and watched daily for 2 hours(9). Figueiro *et al*. in 2011 noticed, early screen exposure is the major cause of decreased melatonin concentration causing neurochemical and anatomical brain changes in children (10).LeGates *et al*. in 2012 observed, retinal ganglion cells (RGCs) detect and signals the light input to relevant brain regions. Any disturbance in the biological dark-light rhythms impairs the functioning of melanopsin-expressing neurons which effects cognitive function and increases depression-like behavior (11). In 2013 Takeuchi *et al*. founded, regional grey and white matter of the brain gets effected by screen exposure which correlate with cognitive abilities, verbal competence and aggression(12). Ge *et al*. in 2015 studied, internet addiction in children caused deficiency of GABA, acetylcholine and dopamine which induced varied atypical conducts in them (13). Hermawati *et al*. in 2018 observed, screens due to inadequate stimulation destroys the neurological links (14). Visual and auditory stimuli from screen strikes assertively which cannot be controlled by the developing brain of a child. In a model proposed by Heffler and Oestreicher in 2016, non-social neural circuit formation risk is increased in young children with early exposure to excessive screentime due to lessened environmental experience during crucial time period of brain development (15). Chen and Strodl in 2020 figured, increased autistic-like behaviour was associated with increased daily exposure to screens in children with 0 to 3 years of age (16). In 1975, there was only one screen within a family. Nowadays, a family has 10-15 screens. This digital revolution has drastically increased the screen exposure in young children which is terribly more than advised by American Academy of Paediatrics (4).A child's attention is captured by alluring light and noise from electronic screens and the child gets easily addicted to them. This screen dependence inhibits healthy development of the brain. According to a data from Centre for Disease Control, a bleak rise can be seen in diagnoses rates as in 1975, 1 in 5000 children were diagnosed with virtual autism disorder. This number increased in 2005 with 1 in 500 children, 1 in 68 children in 2014.

As suggested by latest survey of government, at present it may be raised to 1 in 45 children. These statistics points out a miserable picture of today's child who is 100 times more inclined to be virtual autistic (4). The American Academy of Paediatrics (AAP) recommends, babies and toddlers should not be exposed to the digital screens. If at all it is being used then it should be limited to videocalls under parental supervision. Screen exposure of one hour a day is sufficient for preschoolers (6). The World Health Organization (WHO) also states that child under one year of age should not at all be exposed to the screens (6).

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